WO 2005/072347 PCT/US2005/002380 1/130

SEQUENCE LISTING

<110> University of Rochester Yule, D.I. Wagner II, Larry <120> Inositol 1,4,5-trisphosphate receptor mutants and uses thereof <130> 21108.0042P1 <150> 60/539,245 <151> 2004-01-26 <160> 32 <170> FastSEQ for Windows Version 4.0 <210> 1 <211> 2710 <212> PRT <213> Artificial Sequence <223> Description of Artificial Sequence:/note = synthetic construct <400> 1 Met Ser Asp Lys Met Ser Ser Phe Leu His Ile Gly Asp Ile Cys Ser 10 Leu Tyr Ala Glu Gly Ser Thr Asn Gly Phe Ile Ser Thr Leu Gly Leu 25 Val Asp Asp Arg Cys Val Val Gln Pro Glu Ala Gly Asp Leu Asn Asn 40 Pro Pro Lys Lys Phe Arg Asp Cys Leu Phe Lys Leu Cys Pro Met Asn 55 Arg Tyr Ser Ala Gln Lys Gln Phe Trp Lys Ala Ala Lys Pro Gly Ala 70 75 Asn Ser Thr Thr Asp Ala Val Leu Leu Asn Lys Leu His His Ala Ala 85 90 Asp Leu Glu Lys Lys Gln Asn Glu Thr Glu Asn Arg Lys Leu Leu Gly 105 Thr Val Ile Gln Tyr Gly Asn Val Ile Gln Leu Leu His Leu Lys Ser 120 125 Asn Lys Tyr Leu Thr Val Asn Lys Arg Leu Pro Ala Leu Leu Glu Lys 135 140 Asn Ala Met Arg Val Thr Leu Asp Glu Ala Gly Asn Glu Gly Ser Trp 155 150 Phe Tyr Ile Gln Pro Phe Tyr Lys Leu Arg Ser Ile Gly Asp Ser Val 165 170 Val Ile Gly Asp Lys Val Val Leu Asn Pro Val Asn Ala Gly Gln Pro 180 185 Leu His Ala Ser Ser His Gln Leu Val Asp Asn Pro Gly Cys Asn Glu 205 200 Val Asn Ser Val Asn Cys Asn Thr Ser Trp Lys Ile Val Leu Phe Met 220 210 215

Lys 225	Trp	Ser	Asp	Asn	Lys 230	Asp	Asp	Ile	Leu	Lys 235	Gly	Gly	Asp	Val	Val 240
Arg	Leu	Phe	His	Ala 245	Glu	Gln	Glu	Lys	Phe 250	Leu	Thr	Cys	Asp	Glu 255	His
Arg	Lys	Lys	Gln 260	His	Val	Phe	Leu	Arg 265	Thr	Thr	Gly	Arg	Gln 270	Ser	Ala
		275					280					285		Val	
	290					295					300			Phe	
305	_				310					315				Asp	320
				325					330					Pro 335	
			340					345					350	Met	
_		355					360					365		Ile	
	370					375					380			Pro	
385					390					395				Val	400
				405					410					Met 415	
-		_	420				_	425					430	Ala	
		435					440					445		Asn	
	450	_				455					460			Gly	
	Thr	GIN	Asn	GIU		arg	ser	vaı	THE		ьeu	Leu	GIU	Asp	
465		D1	**- 7	m1	470	a 1	mla ar	7	Com	475	@1 m	7.00	17- T	T 011	480
Val	_			485	Gly				490	Gly				Leu 495	Glu
Val Val	Val	Phe	Ser 500	485 Lys	Gly Pro	Asn	Arg	Glu 505	490 Arg	Gly	Lys	Leu	Met 510	495 Arg	Glu Glu
Val Val Gln	Val Asn	Phe Ile 515	Ser 500 Leu	485 Lys Lys	Gly Pro Gln	Asn Ile	Arg Phe 520	Glu 505 Lys	490 Arg Leu	Gly Gln Leu	Lys Gln	Leu Ala 525	Met 510 Pro	495 Arg Phe	Glu Glu Thr
Val Val Gln Asp	Val Asn Cys 530	Phe Ile 515 Gly	Ser 500 Leu Asp	485 Lys Lys Gly	Gly Pro Gln Pro	Asn Ile Met 535	Arg Phe 520 Leu	Glu 505 Lys Arg	490 Arg Leu Leu	Gly Gln Leu Glu	Lys Gln Glu 540	Leu Ala 525 Leu	Met 510 Pro Gly	495 Arg Phe Asp	Glu Glu Thr Gln
Val Gln Asp Arg 545	Val Asn Cys 530 His	Phe Ile 515 Gly Ala	Ser 500 Leu Asp Pro	485 Lys Lys Gly Phe	Gly Pro Gln Pro Arg 550	Asn Ile Met 535 His	Arg Phe 520 Leu Ile	Glu 505 Lys Arg Cys	490 Arg Leu Leu Arg	Gly Gln Leu Glu Leu 555	Lys Gln Glu 540 Cys	Leu Ala 525 Leu Tyr	Met 510 Pro Gly Arg	495 Arg Phe Asp Val	Glu Glu Thr Gln Leu 560
Val Gln Asp Arg 545 Arg	Val Asn Cys 530 His	Phe Ile 515 Gly Ala Ser	Ser 500 Leu Asp Pro	485 Lys Lys Gly Phe Gln 565	Gly Pro Gln Pro Arg 550 Asp	Asn Ile Met 535 His	Arg Phe 520 Leu Ile Arg	Glu 505 Lys Arg Cys	Arg Leu Leu Arg Asn 570	Gly Gln Leu Glu Leu 555 Gln	Lys Gln Glu 540 Cys Glu	Leu Ala 525 Leu Tyr	Met 510 Pro Gly Arg	Asp Val	Glu Glu Thr Gln Leu 560 Lys
Val Val Gln Asp Arg 545 Arg Gln	Val Asn Cys 530 His His	Phe Ile 515 Gly Ala Ser Gly	Ser 500 Leu Asp Pro Gln Phe 580	485 Lys Lys Gly Phe Gln 565 Met	Gly Pro Gln Pro Arg 550 Asp	Asn Ile Met 535 His Tyr	Arg Phe 520 Leu Ile Arg Gln	Glu 505 Lys Arg Cys Lys Ile 585	Arg Leu Leu Arg Asn 570 Gly	Gly Gln Leu Glu Leu 555 Gln	Lys Gln Glu 540 Cys Glu Asp	Leu Ala 525 Leu Tyr Tyr	Met 510 Pro Gly Arg Ile Leu 590	A95 Arg Phe Asp Val Ala 575 Ala	Glu Glu Thr Gln Leu 560 Lys Glu
Val Val Gln Asp Arg 545 Arg Gln Asp	Val Asn Cys 530 His His Phe	Phe Ile 515 Gly Ala ser Gly Ile 595	Ser 500 Leu Asp Pro Gln Phe 580 Thr	485 Lys Lys Gly Phe Gln 565 Met	Gly Pro Gln Pro Arg 550 Asp Gln Leu	Asn Ile Met 535 His Tyr Lys Leu	Arg Phe 520 Leu Ile Arg Gln His 600	Glu 505 Lys Arg Cys Lys Ile 585 Asn	A90 Arg Leu Leu Arg Asn 570 Gly Asn	Gly Gln Leu Glu Leu 555 Gln Tyr Arg	Lys Glu 540 Cys Glu Asp Lys	Leu Ala 525 Leu Tyr Tyr Val Leu 605	Met 510 Pro Gly Arg Ile Leu 590 Leu	A95 Arg Phe Asp Val Ala 575 Ala Glu	Glu Glu Thr Gln Leu 560 Lys Glu Lys
Val Val Gln Asp Arg 545 Arg Gln Asp	Val Asn Cys 530 His Phe Thr Ile 610	Phe Ile 515 Gly Ala Ser Gly Ile 595 Thr	Ser 500 Leu Asp Pro Gln Phe 580 Thr	485 Lys Lys Gly Phe Gln 565 Met Ala	Gly Pro Gln Pro Arg 550 Asp Gln Leu Glu	Asn Ile Met 535 His Tyr Lys Leu Ile 615	Arg Phe 520 Leu Ile Arg Gln His 600 Asp	Glu 505 Lys Arg Cys Lys Ile 585 Asn	A90 Arg Leu Leu Arg Asn 570 Gly Asn Phe	Gly Gln Leu Glu Leu 555 Gln Tyr Arg Val	Lys Gln Glu 540 Cys Glu Asp Lys Ser 620	Leu Ala 525 Leu Tyr Val Leu 605 Leu	Met 510 Pro Gly Arg Ile Leu 590 Leu Val	A95 Arg Phe Asp Val Ala 575 Ala Glu Arg	Glu Glu Thr Gln Leu 560 Lys Glu Lys Lys
Val Val Gln Asp Arg 545 Arg Gln Asp His Asn 625	Val Asn Cys 530 His Phe Thr Ile 610 Arg	Phe Ile 515 Gly Ala Ser Gly Ile 595 Thr	Ser 500 Leu Asp Pro Gln Phe 580 Thr Ala	485 Lys Gly Phe Gln 565 Met Ala Ala	Gly Pro Gln Pro Arg 550 Asp Gln Leu Glu Phe 630	Asn Ile Met 535 His Tyr Lys Leu Ile 615 Leu	Arg Phe 520 Leu Ile Arg Gln His 600 Asp	Glu 505 Lys Arg Cys Lys Ile 585 Asn Thr	A90 Arg Leu Leu Arg Asn 570 Gly Asn Phe	Gly Gln Leu Glu Leu 555 Gln Tyr Arg Val Ser 635	Lys Gln Glu 540 Cys Glu Asp Lys Ser 620 Asp	Leu Ala 525 Leu Tyr Tyr Val Leu 605 Leu Leu	Met 510 Pro Gly Arg Ile Leu 590 Leu Val	A95 Arg Phe Asp Val Ala 575 Ala Glu Arg Val	Glu Glu Thr Gln Leu 560 Lys Glu Lys Ser 640
Val Val Gln Asp Arg 545 Arg Gln Asp His Asn 625 Met	Val Asn Cys 530 His Phe Thr Ile 610 Arg Asn	Phe Ile 515 Gly Ala Ser Gly Ile 595 Thr Glu Lys	Ser 500 Leu Asp Pro Gln Phe 580 Thr Ala Pro	485 Lys Gly Phe Gln 565 Met Ala Ala Arg	Gly Pro Gln Pro Arg 550 Asp Gln Leu Glu Phe 630 Pro	Asn Ile Met 535 His Tyr Lys Leu Ile 615 Leu Val	Arg Phe 520 Leu Ile Arg Gln His 600 Asp Asp	Glu 505 Lys Arg Cys Lys Ile 585 Asn Thr	Asn Sin Phe Leu Glu 650	Gly Gln Leu Glu Leu 555 Gln Tyr Arg Val Ser 635 Leu	Lys Gln Glu 540 Cys Glu Asp Lys Ser 620 Asp	Leu Ala 525 Leu Tyr Tyr Val Leu 605 Leu Leu Cys	Met 510 Pro Gly Arg Ile Leu 590 Leu Val Cys	Asp Val Ala 575 Ala Glu Arg Val Ala 655	Glu Glu Thr Gln Leu 560 Lys Glu Lys Ser 640 Val
Val Val Gln Asp Arg 545 Arg Gln Asp His Asn 625 Met Leu	Val Asn Cys 530 His Phe Thr Ile 610 Arg Asn	Phe Ile 515 Gly Ala Ser Gly Ile 595 Thr Glu Lys Pro	Ser 500 Leu Asp Pro Gln Phe 580 Thr Ala Pro Ser Thr 660	Lys Lys Gly Phe Gln 565 Met Ala Ala Arg Ile 645 Asn	Gly Pro Gln Pro Arg 550 Asp Gln Leu Glu Phe 630 Pro	Asn Ile Met 535 His Tyr Lys Leu Ile 615 Leu Val	Arg Phe 520 Leu Ile Arg Gln His 600 Asp Thr	Glu 505 Lys Arg Cys Lys Ile 585 Asn Thr Tyr Gln Leu 665	A90 Arg Leu Leu Arg Asn 570 Gly Asn Phe Leu Glu 650 Ile	Gly Gln Leu Glu Leu 555 Gln Tyr Arg Val Ser 635 Leu Glu	Lys Gln Glu 540 Cys Glu Asp Lys Ser 620 Asp Ile Thr	Leu Ala 525 Leu Tyr Tyr Val Leu 605 Leu Leu Cys	Met 510 Pro Gly Arg Ile Leu 590 Leu Val Cys Lys	Asp Val Ala 575 Ala Glu Arg Val Ala 655 Val	Glu Glu Thr Gln Leu 560 Lys Glu Lys Ser 640 Val Leu
Val Val Gln Asp Arg 545 Arg Gln Asp His Asn 625 Met Leu Ser	Val Asn Cys 530 His His Phe Thr Ile 610 Arg Asn Asn	Phe Ile 515 Gly Ala Ser Gly Ile 595 Thr Glu Lys Pro Phe 675	Ser 500 Leu Asp Pro Gln Phe 580 Thr Ala Pro Ser Thr 660 Glu	Lys Gly Phe Gln 565 Met Ala Ala Arg Ile 645 Asn Phe	Gly Pro Gln Pro Arg 550 Asp Gln Leu Glu Phe 630 Pro Ala Glu	Asn Ile Met 535 His Tyr Lys Leu Ile 615 Leu Val Asp	Arg Phe 520 Leu Ile Arg Gln His 600 Asp Thr Ile Val 680	Glu 505 Lys Arg Cys Lys Ile 585 Asn Thr Tyr Gln Leu 665 Ser	A90 Arg Leu Leu Arg Asn 570 Gly Asn Phe Leu Glu 650 Ile Thr	Gly Gln Leu Glu Leu 555 Gln Tyr Arg Val Ser 635 Leu Glu Gly	Lys Gln Glu 540 Cys Glu Asp Lys Ser 620 Asp Ile Thr	Leu Ala 525 Leu Tyr Tyr Val Leu 605 Leu Cys Lys Asn 685	Met 510 Pro Gly Arg Ile Leu 590 Leu Val Cys Lys Leu 670 Ala	Asp Val Ala 575 Ala Glu Arg Val Ala 655 Val	Glu Glu Thr Gln Leu 560 Lys Glu Lys Ser 640 Val Leu Glu

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Lys Glu Ile Arg Ser Lys Ser Val Arg Glu Leu Ala Gln Asp Ala Lys 710 715 Glu Gly Gln Lys Glu Asp Arg Asp Val Leu Ser Tyr Tyr Arg Tyr Gln 725 730 Leu Asn Leu Phe Ala Arg Met Cys Leu Asp Arg Gln Tyr Leu Ala Ile 745 Asn Glu Ile Ser Gly Gln Leu Asp Val Asp Leu Ile Leu Arg Cys Met 760 Ser Asp Glu Asn Leu Pro Tyr Asp Leu Arq Ala Ser Phe Cys Arq Leu 775 Met Leu His Met His Val Asp Arg Asp Pro Gln Glu Gln Val Thr Pro Val Lys Tyr Ala Arg Leu Trp Ser Glu Ile Pro Ser Glu Ile Ala Ile 810 Asp Asp Tyr Asp Ser Ser Gly Ala Ser Lys Asp Glu Ile Lys Glu Arg 825 820 Phe Ala Gln Thr Met Glu Phe Val Glu Glu Tyr Leu Arg Asp Val Val 840 Cys Gln Arg Phe Pro Phe Ser Asp Lys Glu Lys Asn Lys Leu Thr Phe 855 860 Glu Val Val Asn Leu Ala Arg Asn Leu Ile Tyr Phe Gly Phe Tyr Asn 870 875 Phe Ser Asp Leu Leu Arg Leu Thr Lys Ile Leu Leu Ala Ile Leu Asp 885 890 Cys Val His Val Thr Thr Ile Phe Pro Ile Ser Lys Met Thr Lys Gly 905 900 Glu Glu Asn Lys Gly Ser Asn Val Met Arg Ser Ile His Gly Val Gly 920 Glu Leu Met Thr Gln Val Val Leu Arg Gly Gly Phe Leu Pro Met 935 Thr Pro Met Ala Ala Pro Glu Gly Asn Val Lys Gln Ala Glu Pro 950 955 Glu Lys Glu Asp Ile Met Val Met Asp Thr Lys Leu Lys Ile Ile Glu 970 965 Ile Leu Gln Phe Ile Leu Asn Val Arg Leu Asp Tyr Arg Ile Ser Cys 985 Leu Leu Cys Ile Phe Lys Arg Glu Phe Asp Glu Ser Asn Ser Gln Ser 995 1000 1005 Ser Glu Thr Ser Ser Gly Asn Ser Ser Glu Glu Gly Pro Ser Asn Val 1010 1015 1020 Pro Gly Ala Leu Asp Phe Glu His Ile Glu Glu Gln Ala Glu Gly Ile 1025 1030 1035 Phe Gly Gly Ser Glu Glu Asn Thr Pro Leu Asp Leu Asp Asp His Gly 1045 1050 1055 Gly Arg Thr Phe Leu Arg Val Leu Leu His Leu Thr Met His Asp Tyr 1060 1065 1070 Pro Pro Leu Val Ser Gly Ala Leu Gln Leu Leu Phe Arg His Phe Ser 1080 1085 Gln Arg Gln Glu Val Leu Gln Ala Phe Lys Gln Val Gln Leu Leu Val 1095 1100 Thr Ser Gln Asp Val Asp Asn Tyr Lys Gln Ile Lys Gln Asp Leu Asp 1110 1115 Gln Leu Arg Ser Ile Val Glu Lys Ser Glu Leu Trp Val Tyr Lys Gly 1125 1130 Gln Gly Pro Asp Glu Pro Met Asp Gly Ala Ser Gly Glu Asn Glu His 1140 1145 Lys Lys Thr Glu Glu Gly Thr Ser Lys Pro Leu Lys His Glu Ser Thr 1160 1165 Ser Ser Tyr Asn Tyr Arg Val Val Lys Glu Ile Leu Ile Arg Leu Ser 1175

Lys Leu Cys Val Gln Glu Ser Ala Ser Val Arg Lys Ser Arg Lys Gln 1190 1195 Gln Gln Arg Leu Leu Arg Asn Met Gly Ala His Ala Val Val Leu Glu 1210 1205 Leu Leu Gln Ile Pro Tyr Glu Lys Ala Glu Asp Thr Lys Met Gln Glu 1220 1225 Ile Met Arq Leu Ala His Glu Phe Leu Gln Asn Phe Cys Ala Gly Asn 1240 1245 Gln Gln Asn Gln Ala Leu Leu His Lys His Ile Asn Leu Phe Leu Asn 1250 1255 1260 Pro Gly Ile Leu Glu Ala Val Thr Met Gln His Ile Phe Met Asn Asn 1275 1270 Phe Gln Leu Cys Ser Glu Ile Asn Glu Arg Val Val Gln His Phe Val 1285 1290 His Cys Ile Glu Thr His Gly Arg Asn Val Gln Tyr Ile Lys Phe Leu 1300 1305 Gln Thr Ile Val Lys Ala Glu Gly Lys Phe Ile Lys Lys Cys Gln Asp 1315 1320 1325 Met Val Met Ala Glu Leu Val Asn Ser Gly Glu Asp Val Leu Val Phe 1330 1335 1340 Tyr Asn Asp Arg Ala Ser Phe Gln Thr Leu Ile Gln Met Met Arg Ser 1345 1350 1355 Glu Arg Asp Arg Met Asp Glu Asn Ser Pro Leu Phe Met Tyr His Ile 1365 1370 1375 His Leu Val Glu Leu Leu Ala Val Cys Thr Glu Gly Lys Asn Val Tyr 1380 1385 Thr Glu Ile Lys Cys Asn Ser Leu Leu Pro Leu Asp Asp Ile Val Arg 1395 1400 1405 Val Val Thr His Glu Asp Cys Ile Pro Glu Val Lys Ile Ala Tyr Ile 1420 1415 Asn Phe Leu Asn His Cys Tyr Val Asp Thr Glu Val Glu Met Lys Glu 1425 1430 1435 Ile Tyr Thr Ser Asn His Met Trp Lys Leu Phe Glu Asn Phe Leu Val 1445 1450 1455 Asp Ile Cys Arg Ala Cys Asn Asn Thr Ser Asp Arg Lys His Ala Asp 1460 1465 1470 Ser Val Leu Glu Lys Tyr Val Thr Glu Ile Val Met Ser Ile Val Thr 1475 1480 1485 Thr Phe Phe Ser Ser Pro Phe Ser Asp Gln Ser Thr Thr Leu Gln Thr 1500 1490 1495 Arg Gln Pro Val Phe Val Gln Leu Leu Gln Gly Val Phe Arg Val Tyr 1505 1510 1515 His Cys Asn Trp Leu Met Pro Ser Gln Lys Ala Ser Val Glu Ser Cys 1525 1530 1535 Ile Arg Val Leu Ser Asp Val Ala Lys Ser Arg Ala Ile Ala Ile Pro 1540 1545 Val Asp Leu Asp Ser Gln Val Asn Asn Leu Phe Leu Lys Ser His Asn 1555 1560 Ile Val Gln Lys Thr Ala Met Asn Trp Arg Leu Ser Ala Arg Asn Ala 1575 1580 Ala Arg Arg Asp Glu Val Leu Ala Ala Ser Arg Asp Tyr Arg Asn Ile 1590 1595 Ile Glu Arg Leu Gln Asp Ile Val Ser Ala Leu Glu Asp Arg Leu Arg 1605 1610 Pro Leu Val Gln Ala Glu Leu Ser Val Leu Val Asp Val Leu His Arg 1625 1620 Pro Glu Leu Leu Phe Pro Glu Asn Thr Asp Ala Arg Arg Lys Cys Glu 1640 1645 Ser Gly Gly Phe Ile Cys Lys Leu Ile Lys His Thr Lys Gln Leu Leu 1655 1660

Glu Glu Asn Glu Glu Lys Leu Cys Ile Lys Val Leu Gln Thr Leu Arg 1670 1675 Glu Met Met Thr Lys Asp Arg Gly Tyr Gly Glu Lys Gly Glu Ala Leu 1685 1690 Arg Gln Ile Leu Val Asn Arg Tyr Tyr Gly Asn Ile Arg Pro Ser Gly 1700 1705 Arg Arg Glu Ser Leu Thr Ser Phe Gly Asn Gly Pro Leu Ser Pro Gly 1720 Gly Pro Ser Lys Pro Gly Gly Gly Gly Gly Pro Gly Ser Gly Ser 1730 1735 1740 Thr Ser Arg Gly Glu Met Ser Leu Ala Glu Val Gln Cys His Leu Asp 1750 1755 Lys Glu Gly Ala Ser Asn Leu Val Ile Asp Leu Ile Met Asn Ala Ser 1765 1770 Ser Asp Arg Val Phe His Glu Ser Ile Leu Leu Ala Ile Ala Leu Leu 1780 1785 Glu Gly Gly Asn Thr Thr Ile Gln His Ser Phe Phe Cys Arg Leu Thr 1795 1800 1805 Glu Asp Lys Lys Ser Glu Lys Phe Phe Lys Val Phe Tyr Asp Arg Met 1820 1815 Lys Val Ala Gln Glu Ile Lys Ala Thr Val Thr Val Asn Thr Ser 1830 1835 1840 Asp Leu Gly Asn Lys Lys Asp Asp Glu Val Asp Arg Asp Ala Pro 1845 1850 Ser Arg Lys Lys Ala Lys Glu Pro Thr Thr Gln Ile Thr Glu Glu Val 1860 1865 Arg Asp Gln Leu Leu Glu Ala Ser Ala Ala Thr Arg Lys Ala Phe Thr 1875 1880 1885 Thr Phe Arg Arg Glu Ala Asp Pro Asp Asp His Tyr Gln Ser Gly Glu 1890 1895 1900 Gly Thr Gln Ala Thr Thr Asp Lys Ala Lys Asp Asp Leu Glu Met Ser 1910 1915 Ala Val Ile Thr Ile Met Gln Pro Ile Leu Arg Phe Leu Gln Leu Leu 1925 1930 1935 Cys Glu Asn His Asn Arg Asp Leu Gln Asn Phe Leu Arg Cys Gln Asn 1940 1945 1950 Asn Lys Thr Asn Tyr Asn Leu Val Cys Glu Thr Leu Gln Phe Leu Asp 1955 1960 1965 Cys Ile Cys Gly Ser Thr Thr Gly Gly Leu Gly Leu Gly Leu Tyr 1970 1975 1980 Ile Asn Glu Lys Asn Val Ala Leu Ile Asn Gln Thr Leu Glu Ser Leu 1990 1995 2000 Thr Glu Tyr Cys Gln Gly Pro Cys His Glu Asn Gln Asn Cys Ile Ala 2005 2010 2015 Thr His Glu Ser Asn Gly Ile Asp Ile Ile Thr Ala Leu Ile Leu Asn 2020 2025 Asp Ile Asn Pro Leu Gly Lys Lys Arg Met Asp Leu Val Leu Glu Leu 2040 Lys Asn Asn Ala Ser Lys Leu Leu Leu Ala Ile Met Glu Ser Arg His 2055 Asp Ser Glu Asn Ala Glu Arg Ile Leu Tyr Asn Met Arg Pro Lys Glu 2070 2075 Leu Val Glu Val Ile Lys Lys Ala Tyr Met Gln Gly Glu Val Glu Phe 2085 2090 Glu Asp Gly Glu Asn Gly Glu Asp Gly Ala Ala Ser Pro Arg Asn Val 2105 2100 Gly His Asn Ile Tyr Ile Leu Ala His Gln Leu Ala Arg His Asn Lys 2125 2120 Glu Leu Gln Thr Met Leu Lys Pro Gly Gly Gln Val Asp Gly Asp Glu 2135

2145	Tyr Ala Ly 2150	ys His Thr	Ala Gln Ile 2155	Glu Ile Val Arg 2160
		ln Ile Val		Pro Ser Ile Cys
	2165		2170	2175
Glu Phe Leu Thr	Lys Glu S	er Lys Leu	Arg Ile Tyr	Tyr Thr Thr Glu
218		218		2190
	Gly Ser L		Asp Phe Phe	Leu Arg Ser Glu
2195		2200		2205
2210	2:	215	222	
Val Leu Tyr Trp 2225	Cys Ala A	rg Asn Met	Ser Phe Trp 2235	Ser Ser Ile Ser 2240
		let Asn Leu	Leu Val Ala	a Phe Phe Tyr Pro
	2245		2250	2255
Phe Lys Gly Val 226		ly Thr Leu 226		Trp Ser Gly Leu 2270
				l Ile Ala Leu Pro
2275	nee bea r	2280		2285
Lys Pro His Gly	_	la Leu Ile		Ile Leu Arg Leu
2290		295	230	
	2310	in Pro Thr	2315	Leu Gly Ala Phe 2320
2305 Agn Val Cyg Agn		le Dhe Leu		e Val Gly Asn Cys
ASII VAI CYS ASII	2325	ic inc bea	2330	2335
Gly Thr Phe Thr		yr Arg Ala		ı Asp Val Glu Phe
234	0	234	5	2350
Leu Tyr His Leu	Leu Tyr L	eu Leu Ile	Cys Ala Met	: Gly Leu Phe Val
2355		2360		2365
2370	2	375	238	
Glu Thr Leu Leu		le Lys Ser		g Asn Gly Arg Pro
2385	2390		2395	2400
	Ala Ala L	eu Ala Leu	Ile Leu Va	l Tyr Leu Phe Ser
Ile Ile Leu Thr	Ala Ala L 2405		Ile Leu Val 2410	l Tyr Leu Phe Ser 2415
Ile Ile Leu Thr	Ala Ala L 2405 Leu Phe P	Phe Lys Asp	Ile Leu Val 2410 Asp Phe Ile	l Tyr Leu Phe Ser
Ile Ile Leu Thr Ile Val Gly Tyr 242	Ala Ala L 2405 Leu Phe P 0	he Lys Asp 242	Ile Leu Val 2410 Asp Phe Ile 5	Tyr Leu Phe Ser 2415 Leu Glu Val Asp 2430
Ile Ile Leu Thr Ile Val Gly Tyr 242 Arg Leu Pro Asn 2435	Ala Ala L 2405 Leu Phe P 0 Glu Thr A	Phe Lys Asp 242 Ala Gly Pro 2440	Ile Leu Val 2410 Asp Phe Ile 5 Glu Thr Gly	Tyr Leu Phe Ser 2415 Leu Glu Val Asp 2430 Glu Ser Leu Ala 2445
Ile Ile Leu Thr Ile Val Gly Tyr 242 Arg Leu Pro Asn 2435 Asn Asp Phe Leu	Ala Ala L 2405 Leu Phe P O Glu Thr A	Phe Lys Asp 242 Ala Gly Pro 2440 Asp Val Cys	Ile Leu Val 2410 Asp Phe Ile 5 Glu Thr Gly Arg Val Glu	Tyr Leu Phe Ser 2415 Leu Glu Val Asp 2430 Glu Ser Leu Ala 2445 Thr Gly Glu Asn
Ile Ile Leu Thr Ile Val Gly Tyr 242 Arg Leu Pro Asn 2435 Asn Asp Phe Leu 2450	Ala Ala L 2405 Leu Phe P 0 Glu Thr A Tyr Ser A	Phe Lys Asp 242 Ala Gly Pro 2440 Asp Val Cys	Ile Leu Val 2410 Asp Phe Ile 5 Glu Thr Gly Arg Val Glu 240	Tyr Leu Phe Ser 2415 E Leu Glu Val Asp 2430 7 Glu Ser Leu Ala 2445 I Thr Gly Glu Asn
Ile Ile Leu Thr Ile Val Gly Tyr 242 Arg Leu Pro Asn 2435 Asn Asp Phe Leu 2450 Cys Thr Ser Pro	Ala Ala L 2405 Leu Phe P 0 Glu Thr A Tyr Ser A 2 Ala Pro L	Phe Lys Asp 242 Ala Gly Pro 2440 Asp Val Cys	Ile Leu Val 2410 Asp Phe Ile 5 Glu Thr Gly Arg Val Glu 240 Leu Leu Pro	Tyr Leu Phe Ser 2415 Leu Glu Val Asp 2430 Glu Ser Leu Ala 2445 Thr Gly Glu Asn
Ile Ile Leu Thr Ile Val Gly Tyr 242 Arg Leu Pro Asn 2435 Asn Asp Phe Leu 2450 Cys Thr Ser Pro 2465	Ala Ala L 2405 Leu Phe P 0 Glu Thr A Tyr Ser A 2 Ala Pro L 2470	Phe Lys Asp 242 Ala Gly Pro 2440 Asp Val Cys 2455 Lys Glu Glu	Ile Leu Val 2410 Asp Phe Ile 5 Glu Thr Gly Arg Val Glu 246 Leu Leu Pro 2475	Tyr Leu Phe Ser 2415 Leu Glu Val Asp 2430 Glu Ser Leu Ala 2445 Thr Gly Glu Asn 50 Val Glu Glu Thr
Ile Ile Leu Thr Ile Val Gly Tyr 242 Arg Leu Pro Asn 2435 Asn Asp Phe Leu 2450 Cys Thr Ser Pro 2465	Ala Ala L 2405 Leu Phe P 0 Glu Thr A Tyr Ser A 2 Ala Pro L 2470	Phe Lys Asp 242 Ala Gly Pro 2440 Asp Val Cys 2455 Lys Glu Glu	Ile Leu Val 2410 Asp Phe Ile 5 Glu Thr Gly Arg Val Glu 246 Leu Leu Pro 2475	Tyr Leu Phe Ser 2415 Leu Glu Val Asp 2430 Glu Ser Leu Ala 2445 Thr Gly Glu Asn 50 Val Glu Glu Thr 2480
Ile Ile Leu Thr Ile Val Gly Tyr 242 Arg Leu Pro Asn 2435 Asn Asp Phe Leu 2450 Cys Thr Ser Pro 2465 Glu Gln Asp Lys	Ala Ala L 2405 Leu Phe P 0 Glu Thr A Tyr Ser A 2 Ala Pro L 2470 Glu His T	Phe Lys Asp 242 Ala Gly Pro 2440 Asp Val Cys 2455 Lys Glu Glu	Ile Leu Val 2410 Asp Phe Ile 5 Glu Thr Gly Arg Val Glu 246 Leu Leu Pro 2475 Thr Leu Leu 2490	Tyr Leu Phe Ser 2415 E Leu Glu Val Asp 2430 Glu Ser Leu Ala 2445 Thr Gly Glu Asn O Val Glu Glu Thr 2480 Met Cys Ile Val
Ile Ile Leu Thr Ile Val Gly Tyr 242 Arg Leu Pro Asn 2435 Asn Asp Phe Leu 2450 Cys Thr Ser Pro 2465 Glu Gln Asp Lys Thr Val Leu Ser	Ala Ala L 2405 Leu Phe P 0 Glu Thr A Tyr Ser A 2 Ala Pro L 2470 Glu His T 2485 His Gly L 0	Phe Lys Asp 242 Ala Gly Pro 2440 Asp Val Cys 2455 Lys Glu Glu Thr Cys Glu Leu Arg Ser 250	Ile Leu Val 2410 Asp Phe Ile 5 Glu Thr Gly Arg Val Glu 246 Leu Leu Pro 2475 Thr Leu Leu 2490 Gly Gly Gly	L Tyr Leu Phe Ser 2415 E Leu Glu Val Asp 2430 Y Glu Ser Leu Ala 2445 I Thr Gly Glu Asn O Val Glu Glu Thr 2480 I Met Cys Ile Val 2495 Y Val Gly Asp Val 2510
Ile Ile Leu Thr Ile Val Gly Tyr 242 Arg Leu Pro Asn 2435 Asn Asp Phe Leu 2450 Cys Thr Ser Pro 2465 Glu Gln Asp Lys Thr Val Leu Ser 250 Leu Arg Lys Pro 2515	Ala Ala L 2405 Leu Phe P 0 Glu Thr A Tyr Ser A 2 Ala Pro L 2470 Glu His T 2485 His Gly L 0 Ser Lys G	Phe Lys Asp 242 Ala Gly Pro 2440 Asp Val Cys 2455 Lys Glu Glu Thr Cys Glu Leu Arg Ser 250 Glu Glu Pro 2520	Ile Leu Val 2410 Asp Phe Ile 5 Glu Thr Gly Arg Val Glu 246 Leu Leu Pro 2475 Thr Leu Leu 2490 Gly Gly Gly 5 Leu Phe Ala	L Tyr Leu Phe Ser 2415 E Leu Glu Val Asp 2430 Y Glu Ser Leu Ala 2445 I Thr Gly Glu Asn O Val Glu Glu Thr 2480 I Met Cys Ile Val 2495 Y Val Gly Asp Val 2510 A Ala Arg Val Ile 2525
Ile Ile Leu Thr Ile Val Gly Tyr 242 Arg Leu Pro Asn 2435 Asn Asp Phe Leu 2450 Cys Thr Ser Pro 2465 Glu Gln Asp Lys Thr Val Leu Ser 250 Leu Arg Lys Pro 2515	Ala Ala L 2405 Leu Phe P 0 Glu Thr A Tyr Ser A 2 Ala Pro L 2470 Glu His T 2485 His Gly L 0 Ser Lys G	Phe Lys Asp 242 Ala Gly Pro 2440 Asp Val Cys 2455 Lys Glu Glu Thr Cys Glu Leu Arg Ser 250 Glu Glu Pro 2520	Ile Leu Val 2410 Asp Phe Ile 5 Glu Thr Gly Arg Val Glu 246 Leu Leu Pro 2475 Thr Leu Leu 2490 Gly Gly Gly 5 Leu Phe Ala	L Tyr Leu Phe Ser 2415 E Leu Glu Val Asp 2430 Y Glu Ser Leu Ala 2445 I Thr Gly Glu Asn O Val Glu Glu Thr 2480 I Met Cys Ile Val 2495 Y Val Gly Asp Val 2510 A Ala Arg Val Ile
Ile Ile Leu Thr Ile Val Gly Tyr 242 Arg Leu Pro Asn 2435 Asn Asp Phe Leu 2450 Cys Thr Ser Pro 2465 Glu Gln Asp Lys Thr Val Leu Ser 250 Leu Arg Lys Pro 2515 Tyr Asp Leu Leu 2530	Ala Ala L 2405 Leu Phe P 0 Glu Thr A Tyr Ser A 2 Ala Pro L 2470 Glu His T 2485 His Gly L 0 Ser Lys G Phe Phe P	Phe Lys Asp 242 Ala Gly Pro 2440 Asp Val Cys 2455 Lys Glu Glu Thr Cys Glu Leu Arg Ser 250 Glu Glu Pro 2520 Phe Met Val	Ile Leu Val 2410 Asp Phe Ile 5 Glu Thr Gly Arg Val Glu 246 Leu Leu Pro 2475 Thr Leu Leu 2490 Gly Gly Gly 5 Leu Phe Ala Ile Ile Ile	L Tyr Leu Phe Ser 2415 Leu Glu Val Asp 2430 Glu Ser Leu Ala 2445 Thr Gly Glu Asn Val Glu Glu Thr 2480 Met Cys Ile Val 2495 Val Gly Asp Val 2510 Ala Arg Val Ile 2525 E Val Leu Asn Leu
Ile Ile Leu Thr Ile Val Gly Tyr 242 Arg Leu Pro Asn 2435 Asn Asp Phe Leu 2450 Cys Thr Ser Pro 2465 Glu Gln Asp Lys Thr Val Leu Ser 2500 Leu Arg Lys Pro 2515 Tyr Asp Leu Leu 2530 Ile Phe Gly Val	Ala Ala L 2405 Leu Phe P 0 Glu Thr A Tyr Ser A 2Ala Pro L 2470 Glu His T 2485 His Gly L 0 Ser Lys G Phe Phe P 2 Ile Ile A	Phe Lys Asp 242 Ala Gly Pro 2440 Asp Val Cys 2455 Lys Glu Glu Thr Cys Glu Leu Arg Ser 250 Glu Glu Pro 2520 Phe Met Val	Ile Leu Val 2410 Asp Phe Ile 5 Glu Thr Gly Arg Val Glu 246 Leu Leu Pro 2475 Thr Leu Leu 2490 Gly Gly Gly Gly 5 Leu Phe Ala Ile Ile Ile 256 Ala Asp Leu	L Tyr Leu Phe Ser 2415 Leu Glu Val Asp 2430 Glu Ser Leu Ala 2445 Thr Gly Glu Asn Val Glu Glu Thr 2480 Met Cys Ile Val 2495 Val Gly Asp Val 2510 A Ala Arg Val Ile 2525 E Val Leu Asn Leu 40 L Arg Ser Glu Lys
Ile Ile Leu Thr Ile Val Gly Tyr 242 Arg Leu Pro Asn 2435 Asn Asp Phe Leu 2450 Cys Thr Ser Pro 2465 Glu Gln Asp Lys Thr Val Leu Ser 250 Leu Arg Lys Pro 2515 Tyr Asp Leu Leu 2530 Ile Phe Gly Val 2545	Ala Ala L 2405 Leu Phe P 0 Glu Thr A Tyr Ser A 2Ala Pro L 2470 Glu His T 2485 His Gly L 0 Ser Lys G Phe Phe P 2 Ile Ile A 2550	Phe Lys Asp 242 Ala Gly Pro 2440 Asp Val Cys 2455 Lys Glu Glu Thr Cys Glu Leu Arg Ser 250 Glu Glu Pro 2520 Phe Met Val 2535 Asp Thr Phe	Ile Leu Val 2410 Asp Phe Ile 5 Glu Thr Gly Arg Val Glu 246 Leu Leu Pro 2475 Thr Leu Leu 2490 Gly Gly Gly 5 Leu Phe Ala Ile Ile Ile 254 Ala Asp Leu 2555	L Tyr Leu Phe Ser 2415 Leu Glu Val Asp 2430 Glu Ser Leu Ala 2445 Thr Gly Glu Asn Val Glu Glu Thr 2480 Met Cys Ile Val 2495 Val Gly Asp Val 2510 A Ala Arg Val Ile 2525 E Val Leu Asn Leu 40 1 Arg Ser Glu Lys 2560
Ile Ile Leu Thr Ile Val Gly Tyr 242 Arg Leu Pro Asn 2435 Asn Asp Phe Leu 2450 Cys Thr Ser Pro 2465 Glu Gln Asp Lys Thr Val Leu Ser 250 Leu Arg Lys Pro 2515 Tyr Asp Leu Leu 2530 Ile Phe Gly Val 2545	Ala Ala L 2405 Leu Phe P 0 Glu Thr A Tyr Ser A 2470 Glu His T 2485 His Gly L 0 Ser Lys G Phe Phe P 2 Ile Ile A 2550 Glu Ile L	Phe Lys Asp 242 Ala Gly Pro 2440 Asp Val Cys 2455 Lys Glu Glu Thr Cys Glu Leu Arg Ser 250 Glu Glu Pro 2520 Phe Met Val 2535 Asp Thr Phe	Ile Leu Val 2410 Asp Phe Ile 5 Glu Thr Gly Arg Val Glu 246 Leu Leu Pro 2475 Thr Leu Leu 2490 Gly Gly Gly 5 Leu Phe Ala Ile Ile Ile 256 Ala Asp Leu 2555 Thr Cys Phe	L Tyr Leu Phe Ser 2415 Leu Glu Val Asp 2430 Glu Ser Leu Ala 2445 Thr Gly Glu Asn Val Glu Glu Thr 2480 Met Cys Ile Val 2495 Val Gly Asp Val 2510 A Ala Arg Val Ile 2525 E Val Leu Asn Leu 40 1 Arg Ser Glu Lys 2560 E Ile Cys Gly Leu
Ile Ile Leu Thr Ile Val Gly Tyr 242 Arg Leu Pro Asn 2435 Asn Asp Phe Leu 2450 Cys Thr Ser Pro 2465 Glu Gln Asp Lys Thr Val Leu Ser 250 Leu Arg Lys Pro 2515 Tyr Asp Leu Leu 2530 Ile Phe Gly Val 2545 Gln Lys Lys Glu	Ala Ala L 2405 Leu Phe P 0 Glu Thr A Tyr Ser A 2470 Glu His T 2485 His Gly L 0 Ser Lys G Phe Phe P 2 Ile Ile A 2550 Glu Ile L 2565	Phe Lys Asp 242 Ala Gly Pro 2440 Asp Val Cys 2455 Lys Glu Glu Thr Cys Glu Leu Arg Ser 250 Slu Glu Pro 2520 Phe Met Val Asp Thr Phe Leu Lys Thr	Ile Leu Val 2410 Asp Phe Ile 5 Glu Thr Gly Arg Val Glu 246 Leu Leu Pro 2475 Thr Leu Leu 2490 Gly Gly Gly Gly 5 Leu Phe Ala Ile Ile Ile 2555 Thr Cys Phe 2570	L Tyr Leu Phe Ser 2415 Leu Glu Val Asp 2430 Glu Ser Leu Ala 2445 Thr Gly Glu Asn Val Glu Glu Thr 2480 Met Cys Ile Val 2495 Val Gly Asp Val 2510 Ala Arg Val Ile 2525 Val Leu Asn Leu 40 Arg Ser Glu Lys 2560 E Ile Cys Gly Leu 2575
Ile Ile Leu Thr Ile Val Gly Tyr 242 Arg Leu Pro Asn 2435 Asn Asp Phe Leu 2450 Cys Thr Ser Pro 2465 Glu Gln Asp Lys Thr Val Leu Ser 250 Leu Arg Lys Pro 2515 Tyr Asp Leu Leu 2530 Ile Phe Gly Val 2545 Gln Lys Lys Glu Glu Arg Asp Lys	Ala Ala L 2405 Leu Phe P 0 Glu Thr A Tyr Ser A 2470 Glu His T 2485 His Gly L 0 Ser Lys G Phe Phe P 2 Ile Ile A 2550 Glu Ile L 2565 Phe Asp A	Phe Lys Asp 242 Ala Gly Pro 2440 Asp Val Cys 2455 Lys Glu Glu Thr Cys Glu Leu Arg Ser 250 Plu Glu Pro 2520 Ple Met Val Asp Thr Phe Leu Lys Thr	Ile Leu Val 2410 Asp Phe Ile 5 Glu Thr Gly Arg Val Glu 246 Leu Leu Pro 2475 Thr Leu Leu 2490 Gly Gly Gly 5 Leu Phe Ala Ile Ile Ile 255 Ala Asp Leu 2555 Thr Cys Phe 2570 Val Thr Phe	L Tyr Leu Phe Ser 2415 Leu Glu Val Asp 2430 Glu Ser Leu Ala 2445 Thr Gly Glu Asn Val Glu Glu Thr 2480 Met Cys Ile Val 2495 Val Gly Asp Val 2510 A Ala Arg Val Ile 2525 E Val Leu Asn Leu 40 1 Arg Ser Glu Lys 2560 E Ile Cys Gly Leu
Ile Ile Leu Thr Ile Val Gly Tyr 242 Arg Leu Pro Asn 2435 Asn Asp Phe Leu 2450 Cys Thr Ser Pro 2465 Glu Gln Asp Lys Thr Val Leu Ser 250 Leu Arg Lys Pro 2515 Tyr Asp Leu Leu 2530 Ile Phe Gly Val 2545 Gln Lys Lys Glu Glu Arg Asp Lys 258 Lys Glu Glu His	Ala Ala L 2405 Leu Phe P 0 Glu Thr A Tyr Ser A 2470 Glu His T 2485 His Gly L 0 Ser Lys G Phe Phe P 2 Ile Ile A 2550 Glu Ile L 2565 Phe Asp A	Phe Lys Asp 242 Ala Gly Pro 2440 Asp Val Cys 2455 Lys Glu Glu Thr Cys Glu Leu Arg Ser 250 Phe Met Val 2535 Asp Thr Phe Leu Lys Thr Asn Lys Thr 258	Ile Leu Val 2410 Asp Phe Ile 5 Glu Thr Gly Arg Val Glu 246 Leu Leu Pro 2475 Thr Leu Leu 2490 Gly Gly Gly Gly 5 Leu Phe Ala Ile Ile Ile 2555 Thr Cys Phe 2570 Val Thr Phe	L Tyr Leu Phe Ser 2415 Leu Glu Val Asp 2430 Glu Ser Leu Ala 2445 Thr Gly Glu Asn Val Glu Glu Thr 2480 Met Cys Ile Val 2495 Val Gly Asp Val 2510 Ala Arg Val Ile 2525 Val Leu Asn Leu 40 Arg Ser Glu Lys 2560 E Ile Cys Gly Leu 2575 E Glu Glu His Ile 2590 E Ile Val Leu Val
Ile Ile Leu Thr Ile Val Gly Tyr 242 Arg Leu Pro Asn 2435 Asn Asp Phe Leu 2450 Cys Thr Ser Pro 2465 Glu Gln Asp Lys Thr Val Leu Ser 250 Leu Arg Lys Pro 2515 Tyr Asp Leu Leu 2530 Ile Phe Gly Val 2545 Gln Lys Lys Glu Glu Arg Asp Lys 258 Lys Glu Glu His 2595	Ala Ala L 2405 Leu Phe P 0 Glu Thr A Tyr Ser A 2470 Glu His T 2485 His Gly L 0 Ser Lys G Phe Phe P 2 Ile Ile A 2550 Glu Ile L 2565 Phe Asp A 0 Asn Met T	Phe Lys Asp 242 Ala Gly Pro 2440 Asp Val Cys 2455 Lys Glu Glu Thr Cys Glu Leu Arg Ser 250 Phe Met Val 2535 Asp Thr Phe Leu Lys Thr Asn Lys Thr 258 Crp His Tyr 2600	Ile Leu Val 2410 Asp Phe Ile 5 Glu Thr Gly Arg Val Glu 246 Leu Leu Pro 2475 Thr Leu Leu 2490 Gly Gly Gly 5 Leu Phe Ala Ile Ile Ile 255 Ala Asp Leu 2555 Thr Cys Phe 2570 Val Thr Phe 5 Leu Cys Phe	L Tyr Leu Phe Ser 2415 Leu Glu Val Asp 2430 Glu Ser Leu Ala 2445 Thr Gly Glu Asn Val Glu Glu Thr 2480 Met Cys Ile Val 2495 Val Gly Asp Val 2510 Ala Arg Val Ile 2525 E Val Leu Asn Leu 40 1 Arg Ser Glu Lys 2560 E Ile Cys Gly Leu 2575 E Glu Glu His Ile 2590 E Ile Val Leu Val 2605
Ile Ile Leu Thr Ile Val Gly Tyr 242 Arg Leu Pro Asn 2435 Asn Asp Phe Leu 2450 Cys Thr Ser Pro 2465 Glu Gln Asp Lys Thr Val Leu Ser 250 Leu Arg Lys Pro 2515 Tyr Asp Leu Leu 2530 Ile Phe Gly Val 2545 Gln Lys Lys Glu Glu Arg Asp Lys 258 Lys Glu Glu His 2595	Ala Ala L 2405 Leu Phe P 0 Glu Thr A Tyr Ser A 2470 Glu His T 2485 His Gly L 0 Ser Lys G Phe Phe P 21le Ile A 2550 Glu Ile L 2565 Phe Asp A 0 Asn Met T	Phe Lys Asp 242 Ala Gly Pro 2440 Asp Val Cys 2455 Lys Glu Glu Thr Cys Glu Leu Arg Ser 250 Phe Met Val 2535 Asp Thr Phe Leu Lys Thr Asn Lys Thr 258 Crp His Tyr 2600	Ile Leu Val 2410 Asp Phe Ile 5 Glu Thr Gly Arg Val Glu 246 Leu Leu Pro 2475 Thr Leu Leu 2490 Gly Gly Gly 5 Leu Phe Ala Ile Ile Ile 255 Ala Asp Leu 2555 Thr Cys Phe 2570 Val Thr Phe 5 Leu Cys Phe	Tyr Leu Phe Ser 2415 Leu Glu Val Asp 2430 Glu Ser Leu Ala 2445 Thr Gly Glu Asn Val Glu Glu Thr 2480 Met Cys Ile Val 2495 Val Gly Asp Val 2510 A Ala Arg Val Ile 2525 E Val Leu Asn Leu 40 Arg Ser Glu Lys 2575 Glu Glu His Ile 2590 E Ile Val Leu Val 2605 A Ser Tyr Val Ala

<210> 2

<211> 2749

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:/note =
 synthetic construct

Met Ser Asp Lys Met Ser Ser Phe Leu His Ile Gly Asp Ile Cys Ser Leu Tyr Ala Glu Gly Ser Thr Asn Gly Phe Ile Ser Thr Leu Gly Leu 25 Val Asp Asp Arg Cys Val Val Gln Pro Glu Ala Gly Asp Leu Asn Asn 40 Pro Pro Lys Lys Phe Arg Asp Cys Leu Phe Lys Leu Cys Pro Met Asn 55 Arg Tyr Ser Ala Gln Lys Gln Phe Trp Lys Ala Ala Lys Pro Gly Ala 70 75 Asn Ser Thr Thr Asp Ala Val Leu Leu Asn Lys Leu His His Ala Ala 85 90 Asp Leu Glu Lys Lys Gln Asn Glu Thr Glu Asn Arg Lys Leu Leu Gly 105 100 Thr Val Ile Gln Tyr Gly Asn Val Ile Gln Leu Leu His Leu Lys Ser 120 125 Asn Lys Tyr Leu Thr Val Asn Lys Arg Leu Pro Ala Leu Leu Glu Lys 135 140 Asn Ala Met Arg Val Thr Leu Asp Glu Ala Gly Asn Glu Gly Ser Trp 150 155 Phe Tyr Ile Gln Pro Phe Tyr Lys Leu Arg Ser Ile Gly Asp Ser Val 170 Val Ile Gly Asp Lys Val Val Leu Asn Pro Val Asn Ala Gly Gln Pro 185 Leu His Ala Ser Ser His Gln Leu Val Asp Asn Pro Gly Cys Asn Glu 200 Val Asn Ser Val Asn Cys Asn Thr Ser Trp Lys Ile Val Leu Phe Met 215 220 Lys Trp Ser Asp Asn Lys Asp Asp Ile Leu Lys Gly Gly Asp Val Val 235 230 Arg Leu Phe His Ala Glu Gln Glu Lys Phe Leu Thr Cys Asp Glu His 245 250 Arg Lys Lys Gln His Val Phe Leu Arg Thr Thr Gly Arg Gln Ser Ala 265 Thr Ser Ala Thr Ser Ser Lys Ala Leu Trp Glu Val Glu Val Val Gln 280

	290		_			295					300	Ser			
Phe 305	Lys	His	Leu	Ala	Thr 310	Gly	His	Tyr	Leu	Ala 315	Ala	Glu	Val	Asp	Pro 320
Asp	Phe	Glu	Glu	Glu 325	Cys	Leu	Glu	Phe	Gln 330	Pro	Ser	Val	Asp	Pro 335	Asp
Gln	Asp	Ala	Ser 340	Arg	Ser	Arg	Leu	Arg 345	Asn	Ala	Gln	Glu	Lys 350	Met	Val
Tyr	Ser	Leu 355	Val	Ser	Val	Pro	Glu 360	Gly	Asn	Asp	Ile	Ser 365	Ser	Ile	Phe
Glu	Leu 370	Asp	Pro	Thr	Thr	Leu 375	Arg	Gly	Gly	Asp	Ser 380	Leu	Val	Pro	Arg
385		_		_	390					395		Thr			400
				405					410			Pro		415	
			420					425				Ala	430		
		435					440					Phe 445			
	450	-			_	455			_	_	460	Glu	_	_	
Ile 465	Thr	Gln	Asn	Glu	Arg 470	Arg	Ser	Val	Thr	Lys 475	Leu	Leu	Glu	Asp	Leu 480
Val	Tyr	Phe	Val	Thr 485	Gly	Gly	Thr	Asn	Ser 490	Gly	Gln	Asp	Val	Leu 495	Glu
Val	Val	Phe	Ser 500	Lys	Pro	Asn	Arg	Glu 505	Arg	Gln	Lys	Leu	Met 510	Arg	Glu
Gln	Asn	Ile 515	Leu	Lys	Gln	Ile	Phe 520	Lys	Leu	Leu	Gln	Ala 525	Pro	Phe	Thr
Asp	Cys 530	Gly	Asp	Gly	Pro	Met 535	Leu	Arg	Leu	Glu	Glu 540	Leu	Gly	Asp	Gln
Arg 545	His	Ala	Pro	Phe	Arg 550	His	Ile	Cys	Arg	Leu 555	Cys	Tyr	Arg	Val	Leu 560
	His	Ser	Gln	Gln 565		Tyr	Arg	Lys	Asn 570		Glu	Tyr	Ile	Ala 575	
		_	580			_		585				Val	590		
Asp	Thr	Ile 595	Thr	Ala	Leu	Leu	His 600	Asn	Asn	Arg	Lys	Leu 605	Leu	Glu	Lys
His	Ile 610	Thr	Ala	Ala	Glu	Ile 615	_	Thr	Phe	Val	Ser 620	Leu	Val	Arg	Lys
Asn 625	Arg	Glu	Pro	Arg	Phe 630	Leu	Asp	Tyr	Leu	Ser 635	Asp	Leu	Cys	Val	Ser 640
	Asn	Lys	Ser	Ile 645		Val	Thr	Gln	Glu 650		Ile	Cys	Lys	Ala 655	
Leu	Asn	Pro	Thr 660	Asn	Ala	Asp	Ile	Leu 665	Ile	Glu	Thr	Lys	Leu 670	Val	Leu
Ser	Arg	Phe 675	Glu	Phe	Glu	Gly	Val 680	Ser	Thr	Gly	Glu	Asn 685	Ala	Leu	Glu
Ala	Gly 690	Glu	Asp	Glu	Glu	Glu 695	Val	Trp	Leu	Phe	Trp 700	Arg	Asp	Ser	Asn
Lys 705	Glu	Ile	Arg	Ser	Lys 710	Ser	Val	Arg	Glu	Leu 715	Ala	Gln	Asp	Ala	Lys 720
	Gly	Gln	Lys	Glu 725		Arg	Asp	Val	Leu 730		Tyr	Tyr	Arg	Tyr 735	
Leu	Asn	Leu	Phe 740		Arg	Met	Cys	Leu 745		Arg	Gln	Tyr	Leu 750		Ile
Asn	Glu	Ile 755		Gly	Gln	Leu	Asp 760	Val	Asp	Leu	Ile	Leu 765	Arg	Cys	Met

Ser Asp Glu Asn Leu Pro Tyr Asp Leu Arg Ala Ser Phe Cys Arg Leu 775 Met Leu His Met His Val Asp Arg Asp Pro Gln Glu Gln Val Thr Pro 790 795 Val Lys Tyr Ala Arg Leu Trp Ser Glu Ile Pro Ser Glu Ile Ala Ile 805 810 Asp Asp Tyr Asp Ser Ser Gly Ala Ser Lys Asp Glu Ile Lys Glu Arg 825 Phe Ala Gln Thr Met Glu Phe Val Glu Glu Tyr Leu Arg Asp Val Val 840 Cys Gln Arg Phe Pro Phe Ser Asp Lys Glu Lys Asn Lys Leu Thr Phe 855 860 Glu Val Val Asn Leu Ala Arg Asn Leu Ile Tyr Phe Gly Phe Tyr Asn 875 870 Phe Ser Asp Leu Leu Arg Leu Thr Lys Ile Leu Leu Ala Ile Leu Asp 890 885 Cys Val His Val Thr Thr Ile Phe Pro Ile Ser Lys Met Thr Lys Gly 905 Glu Glu Asn Lys Gly Ser Asn Val Met Arg Ser Ile His Gly Val Gly 920 Glu Leu Met Thr Gln Val Val Leu Arg Gly Gly Phe Leu Pro Met 935 Thr Pro Met Ala Ala Ala Pro Glu Gly Asn Val Lys Gln Ala Glu Pro 955 950 Glu Lys Glu Asp Ile Met Val Met Asp Thr Lys Leu Lys Ile Ile Glu 965 970 Ile Leu Gln Phe Ile Leu Asn Val Arg Leu Asp Tyr Arg Ile Ser Cys 985 980 Leu Leu Cys Ile Phe Lys Arg Glu Phe Asp Glu Ser Asn Ser Gln Ser 1000 Ser Glu Thr Ser Ser Gly Asn Ser Ser Gln Glu Gly Pro Ser Asn Val 1010 1015 1020 Pro Gly Ala Leu Asp Phe Glu His Ile Glu Glu Gln Ala Glu Gly Ile 1030 1035 Phe Gly Gly Ser Glu Glu Asn Thr Pro Leu Asp Leu Asp Asp His Gly 1045 1050 Gly Arg Thr Phe Leu Arg Val Leu Leu His Leu Thr Met His Asp Tyr 1060 1065 Pro Pro Leu Val Ser Gly Ala Leu Gln Leu Leu Phe Arg His Phe Ser 1080 1085 1075 Gln Arg Gln Glu Val Leu Gln Ala Phe Lys Gln Val Gln Leu Leu Val 1090 1095 1100 Thr Ser Gln Asp Val Asp Asn Tyr Lys Gln Ile Lys Gln Asp Leu Asp 1110 1115 Gln Leu Arg Ser Ile Val Glu Lys Ser Glu Leu Trp Val Tyr Lys Gly 1130 1125 Gln Gly Pro Asp Glu Pro Met Asp Gly Ala Ser Gly Glu Asn Glu His 1140 1145 Lys Lys Thr Glu Glu Gly Thr Ser Lys Pro Leu Lys His Glu Ser Thr 1155 1160 1165 Ser Ser Tyr Asn Tyr Arg Val Val Lys Glu Ile Leu Ile Arg Leu Ser 1170 1175 1180 Lys Leu Cys Val Gln Glu Ser Ala Ser Val Arg Lys Ser Arg Lys Gln 1190 1195 Gln Gln Arg Leu Leu Arg Asn Met Gly Ala His Ala Val Val Leu Glu 1210 1205 Leu Leu Gln Ile Pro Tyr Glu Lys Ala Glu Asp Thr Lys Met Gln Glu 1225 Ile Met Arg Leu Ala His Glu Phe Leu Gln Asn Phe Cys Ala Gly Asn 1235 1240

Gln Gln Asn Gln Ala Leu Leu His Lys His Ile Asn Leu Phe Leu Asn 1255 1260 Pro Gly Ile Leu Glu Ala Val Thr Met Gln His Ile Phe Met Asn Asn 1275 1270 Phe Gln Leu Cys Ser Glu Ile Asn Glu Arg Val Val Gln His Phe Val 1285 1290 His Cys Ile Glu Thr His Gly Arg Asn Val Gln Tyr Ile Lys Phe Leu 1300 1305 Gln Thr Ile Val Lys Ala Glu Gly Lys Phe Ile Lys Lys Cys Gln Asp 1320 Met Val Met Ala Glu Leu Val Asn Ser Gly Glu Asp Val Leu Val Phe 1335 1340 Tyr Asn Asp Arg Ala Ser Phe Gln Thr Leu Ile Gln Met Met Arg Ser 1345 1350 1355 Glu Arg Asp Arg Met Asp Glu Asn Ser Pro Leu Phe Met Tyr His Ile 1365 1370 1375 His Leu Val Glu Leu Leu Ala Val Cys Thr Glu Gly Lys Asn Val Tyr 1380 1385 Thr Glu Ile Lys Cys Asn Ser Leu Leu Pro Leu Asp Asp Ile Val Arg 1395 1400 1405 Val Val Thr His Glu Asp Cys Ile Pro Glu Val Lys Ile Ala Tyr Ile 1410 1415 1420 Asn Phe Leu Asn His Cys Tyr Val Asp Thr Glu Val Glu Met Lys Glu 1430 1435 Ile Tyr Thr Ser Asn His Met Trp Lys Leu Phe Glu Asn Phe Leu Val 1445 1450 1455 Asp Ile Cys Arq Ala Cys Asn Asn Thr Ser Asp Arg Lys His Ala Asp 1460 1465 1470 Ser Val Leu Glu Lys Tyr Val Thr Glu Ile Val Met Ser Ile Val Thr 1475 1480 1485 Thr Phe Phe Ser Ser Pro Phe Ser Asp Gln Ser Thr Thr Leu Gln Thr 1490 1495 1500 Arg Gln Pro Val Phe Val Gln Leu Leu Gln Gly Val Phe Arg Val Tyr 1510 1515 His Cys Asn Trp Leu Met Pro Ser Gln Lys Ala Ser Val Glu Ser Cys 1525 1530 1535 Ile Arg Val Leu Ser Asp Val Ala Lys Ser Arg Ala Ile Ala Ile Pro 1540 1545 1550 Val Asp Leu Asp Ser Gln Val Asn Asn Leu Phe Leu Lys Ser His Asn 1555 1560 1565 Ile Val Gln Lys Thr Ala Met Asn Trp Arg Leu Ser Ala Arg Asn Ala 1570 1575 1580 Ala Arg Arg Asp Glu Val Leu Ala Ala Ser Arg Asp Tyr Arg Asn Ile 1585 1590 1595 Ile Glu Arq Leu Gln Asp Ile Val Ser Ala Leu Glu Asp Arg Leu Arg 1605 1610 Pro Leu Val Gln Ala Glu Leu Ser Val Leu Val Asp Val Leu His Arg 1625 Pro Glu Leu Leu Phe Pro Glu Asn Thr Asp Ala Arg Arg Lys Cys Glu 1640 1645 Ser Gly Gly Phe Ile Cys Lys Leu Ile Lys His Thr Lys Gln Leu Leu 1655 1660 Glu Glu Asn Glu Glu Lys Leu Cys Ile Lys Val Leu Gln Thr Leu Arg 1670 1675 Glu Met Met Thr Lys Asp Arg Gly Tyr Gly Glu Lys Gln Ile Ser Ile 1685 1690 Asp Glu Leu Glu Asn Ala Glu Leu Pro Gln Pro Pro Glu Ala Glu Asn 1700 1705 Ser Thr Glu Glu Leu Glu Pro Ser Pro Pro Leu Arg Gln Leu Glu Asp 1720 1725 1715

His Lys Arg Gly 1730	1735	5	1740	
Gly Asn Ile Arg 1745	1750		1755	1760
Asn Gly Pro Leu	Ser Pro Gly 1765	Gly Pro Ser 177		ly Gly Gly Gly 1775
Gly Gly Pro Gly	-	Thr Ser Arg 1785	Gly Glu M	let Ser Leu Ala 1790
Glu Val Gln Cys 1795	His Leu Asp	Lys Glu Gly 1800		sn Leu Val Ile 805
Asp Leu Ile Met 1810	Asn Ala Ser 1815		Val Phe H 1820	is Glu Ser Ile
Leu Leu Ala Ile 1825	1830		1835	1840
Ser Phe Phe Cys	1845	185	0	1855
Lys Val Phe Tyr 1860	0	1865		1870
Thr Val Thr Val 1875		1880	1	.885
Glu Val Asp Arg 1890	1895	5	1900	
Thr Gln Ile Thr 1905	1910		1915	1920
Ala Thr Arg Lys	Ala Phe Thr 1925	Thr Phe Arg		ala Asp Pro Asp 1935
Asp His Tyr Gln 1940	0	1945		1950
Lys Asp Asp Leu 1955	Glu Met Ser	Ala Val Ile 1960		Met Gln Pro Ile .965
Leu Arg Phe Leu 1970	1975	5	1980	
Asn Phe Leu Arg 1985	1990		1995	2000
Glu Thr Leu Gln	2005	201	0	2015
Leu Gly Leu Leu 2020	0	2025		2030
Asn Gln Thr Leu 2035		2040	2	2045
Glu Asn Gln Asn 2050	Cys Ile Ala 205			
Ile Thr Ala Leu 2065	2070		2075	2080
Met Asp Leu Val	2085	209	0	2095
Ala Ile Met Glu 210		Asp Ser Glu 2105	Asn Ala G	Glu Arg Ile Leu 2110
Tyr Asn Met Arg 2115	Pro Lys Glu	Leu Val Glu 2120		ys Lys Ala Tyr 2125
Met Gln Gly Glu 2130	Val Glu Phe 213		Glu Asn G 2140	ly Glu Asp Gly
Ala Ala Ser Pro 2145	Arg Asn Val 2150	Gly His Asn	Ile Tyr I 2155	lle Leu Ala His 2160
Gln Leu Ala Arg	His Asn Lys 2165	Glu Leu Gln 217		Leu Lys Pro Gly 2175
Gly Gln Val Asp				ala Lys His Thr
218		2185	2	2190

Phe Pro Val Pro Ser Ile Cys Glu Phe Leu Thr Lys Glu Ser Lys Leu 2215 2220 Arg Ile Tyr Tyr Thr Thr Glu Arg Asp Glu Gln Gly Ser Lys Ile Asn 2230 2235 Asp Phe Phe Leu Arg Ser Glu Asp Leu Phe Asn Glu Met Asn Trp Gln 2245 2250 Lys Lys Leu Arg Ala Gln Pro Val Leu Tyr Trp Cys Ala Arg Asn Met 2260 2265 Ser Phe Trp Ser Ser Ile Ser Phe Asn Leu Ala Val Leu Met Asn Leu 2280 2285 2275 Leu Val Ala Phe Phe Tyr Pro Phe Lys Gly Val Arg Gly Gly Thr Leu 2295 2300 Glu Pro His Trp Ser Gly Leu Leu Trp Thr Ala Met Leu Ile Ser Leu 2310 2315 Ala Ile Val Ile Ala Leu Pro Lys Pro His Gly Ile Arg Ala Leu Ile 2330 2325 Ala Ser Thr Ile Leu Arg Leu Ile Phe Ser Val Gly Leu Gln Pro Thr 2340 2345 Leu Phe Leu Leu Gly Ala Phe Asn Val Cys Asn Lys Ile Ile Phe Leu 2360 2365 Met Ser Phe Val Gly Asn Cys Gly Thr Phe Thr Arg Gly Tyr Arg Ala 2375 2380 Met Val Leu Asp Val Glu Phe Leu Tyr His Leu Leu Tyr Leu Leu Ile 2385 2390 2395 Cys Ala Met Gly Leu Phe Val His Glu Phe Phe Tyr Ser Leu Leu 2405 2410 2415 Phe Asp Leu Val Tyr Arg Glu Glu Thr Leu Leu Asn Val Ile Lys Ser 2420 2425 Val Thr Arg Asn Gly Arg Pro Ile Ile Leu Thr Ala Ala Leu Ala Leu 2435 2440 2445 Ile Leu Val Tyr Leu Phe Ser Ile Val Gly Tyr Leu Phe Phe Lys Asp 2450 2455 2460 Asp Phe Ile Leu Glu Val Asp Arg Leu Pro Asn Glu Thr Ala Gly Pro 2470 2475 Glu Thr Gly Glu Ser Leu Ala Asn Asp Phe Leu Tyr Ser Asp Val Cys 2485 2490 2495 Arg Val Glu Thr Gly Glu Asn Cys Thr Ser Pro Ala Pro Lys Glu Glu 2505 2510 Leu Leu Pro Val Glu Glu Thr Glu Gln Asp Lys Glu His Thr Cys Glu 2520 Thr Leu Leu Met Cys Ile Val Thr Val Leu Ser His Gly Leu Arg Ser 2535 2540 Gly Gly Gly Val Gly Asp Val Leu Arg Lys Pro Ser Lys Glu Glu Pro 2545 2550 2555 Leu Phe Ala Ala Arg Val Ile Tyr Asp Leu Leu Phe Phe Met Val 2565 2570 Ile Ile Ile Val Leu Asn Leu Ile Phe Gly Val Ile Ile Asp Thr Phe 2585 2580 Ala Asp Leu Arg Ser Glu Lys Gln Lys Lys Glu Glu Ile Leu Lys Thr 2600 2595 2605 Thr Cys Phe Ile Cys Gly Leu Glu Arg Asp Lys Phe Asp Asn Lys Thr 2615 2620 Val Thr Phe Glu Glu His Ile Lys Glu Glu His Asn Met Trp His Tyr 2630 2635 Leu Cys Phe Ile Val Leu Val Lys Val Lys Asp Ser Thr Glu Tyr Thr 2645 2650 2655 Gly Pro Glu Ser Tyr Val Ala Glu Met Ile Arg Glu Arg Asn Leu Asp 2665 Trp Phe Pro Arg Met Arg Ala Met Ser Leu Val Ser Ser Asp Ser Glu 2680 2685

<210> 3 <211> 2710 <212> PRT <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:/note =
 synthetic construct

Met Ser Asp Lys Met Ser Ser Phe Leu His Ile Gly Asp Ile Cys Ser 10 Leu Tyr Ala Glu Gly Ser Thr Asn Gly Phe Ile Ser Thr Leu Gly Leu 25 Val Asp Asp Arg Cys Val Val Gln Pro Glu Ala Gly Asp Leu Asn Asn Pro Pro Lys Lys Phe Arg Asp Cys Leu Phe Lys Leu Cys Pro Met Asn 55 Arg Tyr Ser Ala Gln Lys Gln Phe Trp Lys Ala Ala Lys Pro Gly Ala 70 75 Asn Ser Thr Thr Asp Ala Val Leu Leu Asn Lys Leu His His Ala Ala 90 85 Asp Leu Glu Lys Lys Gln Asn Glu Thr Glu Asn Arg Lys Leu Leu Gly 105 100 Thr Val Ile Gln Tyr Gly Asn Val Ile Gln Leu Leu His Leu Lys Ser 120 125 Asn Lys Tyr Leu Thr Val Asn Lys Arg Leu Pro Ala Leu Leu Glu Lys 135 140 Asn Ala Met Arg Val Thr Leu Asp Glu Ala Gly Asn Glu Gly Ser Trp 150 155 Phe Tyr Ile Gln Pro Phe Tyr Lys Leu Arg Ser Ile Gly Asp Ser Val 170 Val Ile Gly Asp Lys Val Val Leu Asn Pro Val Asn Ala Gly Gln Pro 185 Leu His Ala Ser Ser His Gln Leu Val Asp Asn Pro Gly Cys Asn Glu 205 200 Val Asn Ser Val Asn Cys Asn Thr Ser Trp Lys Ile Val Leu Phe Met 215 220 Lys Trp Ser Asp Asn Lys Asp Asp Ile Leu Lys Gly Gly Asp Val Val 235 230 Arg Leu Phe His Ala Glu Glu Glu Lys Phe Leu Thr Cys Asp Glu His 250 245 Arg Lys Lys Gln His Val Phe Leu Arg Thr Thr Gly Arg Gln Ser Ala 265 270 260 Thr Ser Ala Thr Ser Ser Lys Ala Leu Trp Glu Val Glu Val Val Gln 280 275 285 His Asp Pro Cys Arg Gly Gly Ala Gly Tyr Trp Asn Ser Leu Phe Arg 295 300 Phe Lys His Leu Ala Thr Gly His Tyr Leu Ala Ala Glu Val Asp Pro 310 315 320

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70	Dho	Glu	Glu	Glu	Care	T.611	Glu	Dhe	Gln	Pro	Ser	Val	Δen	Pro	Δgn
Asp	PHE	Giu	Giu	325	Cys	Dea	Olu	FIIC	330	110	DCI	vai	АБР	335	nsp
Gln	Asp	Ala	Ser 340	Arg	Ser	Arg	Leu	Arg 345	Asn	Ala	Gln	Glu	Lys 350	Met	Val
Tyr	Ser	Leu 355		Ser	Val	Pro	Glu 360	Gly	Asn	Asp	Ile	Ser 365	Ser	Ile	Phe
Glu	Leu 370		Pro	Thr	Thr	Leu 375	Arg	Gly	Gly	Asp	Ser 380	Leu	Val	Pro	Arg
Asn 385		Tyr	Val	Arg	Leu 390		His	Leu	Cys	Thr 395	Asn	Thr	Trp	Val	His 400
	Thr	Asn	Ile	Pro 405		Asp	Lys	Glu	Glu 410		Lys	Pro	Val	Met 415	
Lys	Ile	Gly	Thr 420		Pro	Leu	Lys	Glu 425		Lys	Glu	Ala	Phe 430	Ala	Ile
Val	Pro	Val 435		Pro	Ala	Glu	Val 440		Asp	Leu	Asp	Phe 445	Ala	Asn	Asp
Ala	Ser 450		Val	Leu	Gly	Ser 455	Ile	Ala	Gly	Lys	Leu 460	Glu	Lys	Gly	Thr
Ile 465		Gln	Asn	Glu	Arg 470	Arg	Ser	Val	Thr	Lys 475	Leu	Leu	Glu	Asp	Leu 480
	Tyr	Phe	Val	Thr 485		Gly	Thr	Asn	Ser 490	Gly	Gln	Asp	Val	Leu 495	Glu
Val	Val	Phe	Ser 500	Lys	Pro	Asn	Arg	Glu 505	Arg	Gln	Lys	Leu	Met 510	Arg	Glu
Gln	Asn	Ile 515	Leu	Lys	Gln	Ile	Phe 520	Lys	Leu	Leu	Gln	Ala 525	Pro	Phe	Thr
Asp	Cys 530	Gly	Asp	Gly	Pro	Met 535	Leu	Arg	Leu	Glu	Glu 540	Leu	Gly	Asp	Gln
545					550					555				Val	560
				565					570					Ala 575	
Gln	Phe	Gly	Phe 580	Met	Gln	Lys	Gln	Ile 585	Gly	Tyr	Asp	Val	Leu 590	Ala	Glu
-		595					600					605		Glu	
	610					615	_				620			Arg	
625	_			_	630		_			635				Val	640
		-		645					650					Ala 655	
			660			_		665				_	670		Leu
		675					680					685			Glu
	690		_			695		_			700				Asn
705					710					715					Lys 720
				725					730					735	Gln
			740					745					750		Ile
		755					760					765			Met
	770					775					780				Leu
Met 785	Leu	His	Met	His	Val 790	Asp	Arg	Asp	Pro	Gln 795	Glu	Gln	Val	Thr	Pro 800

Val Lys Tyr Ala Arg Leu Trp Ser Glu Ile Pro Ser Glu Ile Ala Ile 810 Asp Asp Tyr Asp Ser Ser Gly Ala Ser Lys Asp Glu Ile Lys Glu Arq 825 Phe Ala Gln Thr Met Glu Phe Val Glu Glu Tyr Leu Arg Asp Val Val 840 Cys Gln Arg Phe Pro Phe Ser Asp Lys Glu Lys Asn Lys Leu Thr Phe 855 860 Glu Val Val Asn Leu Ala Arg Asn Leu Ile Tyr Phe Gly Phe Tyr Asn 875 870 Phe Ser Asp Leu Leu Arg Leu Thr Lys Ile Leu Leu Ala Ile Leu Asp 885 890 Cys Val His Val Thr Thr Ile Phe Pro Ile Ser Lys Met Thr Lys Gly 905 Glu Glu Asn Lys Gly Ser Asn Val Met Arg Ser Ile His Gly Val Gly 920 925 Glu Leu Met Thr Gln Val Val Leu Arg Gly Gly Gly Phe Leu Pro Met 935 940 Thr Pro Met Ala Ala Pro Glu Gly Asn Val Lys Gln Ala Glu Pro 950 Glu Lys Glu Asp Ile Met Val Met Asp Thr Lys Leu Lys Ile Ile Glu 970 965 Ile Leu Gln Phe Ile Leu Asn Val Arg Leu Asp Tyr Arg Ile Ser Cys 985 Leu Leu Cys Ile Phe Lys Arg Glu Phe Asp Glu Ser Asn Ser Gln Ser 1000 Ser Glu Thr Ser Ser Gly Asn Ser Ser Gln Glu Gly Pro Ser Asn Val 1015 1020 Pro Gly Ala Leu Asp Phe Glu His Ile Glu Glu Gln Ala Glu Gly Ile 1030 1035 Phe Gly Gly Ser Glu Glu Asn Thr Pro Leu Asp Leu Asp Asp His Gly 1045 1050 Gly Arg Thr Phe Leu Arg Val Leu Leu His Leu Thr Met His Asp Tyr 1060 1065 1070 Pro Pro Leu Val Ser Gly Ala Leu Gln Leu Leu Phe Arg His Phe Ser 1080 1085 Gln Arq Gln Glu Val Leu Gln Ala Phe Lys Gln Val Gln Leu Leu Val 1090 1095 1100 Thr Ser Gln Asp Val Asp Asn Tyr Lys Gln Ile Lys Gln Asp Leu Asp 1110 1115 1120 Gln Leu Arg Ser Ile Val Glu Lys Ser Glu Leu Trp Val Tyr Lys Gly 1130 1125 Gln Gly Pro Asp Glu Pro Met Asp Gly Ala Ser Gly Glu Asn Glu His 1140 1145 1150 Lys Lys Thr Glu Glu Gly Thr Ser Lys Pro Leu Lys His Glu Ser Thr 1155 1160 1165 Ser Ser Tyr Asn Tyr Arg Val Val Lys Glu Ile Leu Ile Arg Leu Ser 1175 1180 Lys Leu Cys Val Gln Glu Ser Ala Ser Val Arg Lys Ser Arg Lys Gln 1185 1190 1195 1200 Gln Gln Arg Leu Leu Arg Asn Met Gly Ala His Ala Val Val Leu Glu 1205 1210 Leu Leu Gln Ile Pro Tyr Glu Lys Ala Glu Asp Thr Lys Met Gln Glu 1220 1225 1230 Ile Met Arq Leu Ala His Glu Phe Leu Gln Asn Phe Cys Ala Gly Asn 1235 1240 1245 Gln Gln Asn Gln Ala Leu Leu His Lys His Ile Asn Leu Phe Leu Asn 1255 1260 Pro Gly Ile Leu Glu Ala Val Thr Met Gln His Ile Phe Met Asn Asn 1270 1275

Phe Gln Leu Cys Ser Glu Ile Asn Glu Arg Val Val Gln His Phe Val 1285 1290 His Cys Ile Glu Thr His Gly Arg Asn Val Gln Tyr Ile Lys Phe Leu 1300 . 1305 Gln Thr Ile Val Lys Ala Glu Gly Lys Phe Ile Lys Lys Cys Gln Asp 1315 1320 Met Val Met Ala Glu Leu Val Asn Ser Gly Glu Asp Val Leu Val Phe 1330 1335 1340 Tyr Asn Asp Arg Ala Ser Phe Gln Thr Leu Ile Gln Met Met Arg Ser 1345 1350 1355 1360 Glu Arg Asp Arg Met Asp Glu Asn Ser Pro Leu Phe Met Tyr His Ile 1365 1370 1375 His Leu Val Glu Leu Leu Ala Val Cys Thr Glu Gly Lys Asn Val Tyr 1380 1385 Thr Glu Ile Lys Cys Asn Ser Leu Leu Pro Leu Asp Asp Ile Val Arg 1395 1400 1405 Val Val Thr His Glu Asp Cys Ile Pro Glu Val Lys Ile Ala Tyr Ile 1410 1415 1420 Asn Phe Leu Asn His Cys Tyr Val Asp Thr Glu Val Glu Met Lys Glu 1430 1435 Ile Tyr Thr Ser Asn His Met Trp Lys Leu Phe Glu Asn Phe Leu Val 1445 1450 1455 Asp Ile Cys Arg Ala Cys Asn Asn Thr Ser Asp Arg Lys His Ala Asp 1460 1465 1470 Ser Val Leu Glu Lys Tyr Val Thr Glu Ile Val Met Ser Ile Val Thr 1475 1480 1485 Thr Phe Phe Ser Ser Pro Phe Ser Asp Gln Ser Thr Thr Leu Gln Thr 1490 1495 1500 Arg Gln Pro Val Phe Val Gln Leu Leu Gln Gly Val Phe Arg Val Tyr 1505 1510 1515 His Cys Asn Trp Leu Met Pro Ser Gln Lys Ala Ser Val Glu Ser Cys 1525 1530 1535 Ile Arg Val Leu Ser Asp Val Ala Lys Ser Arg Ala Ile Ala Ile Pro 1540 1545 1550 Val Asp Leu Asp Ser Gln Val Asn Asn Leu Phe Leu Lys Ser His Asn 1555 1560 1565 Ile Val Gln Lys Thr Ala Met Asn Trp Arg Leu Ser Ala Arg Asn Ala 1570 1575 1580 Ala Arg Arg Asp Asp Val Leu Ala Ala Ser Arg Asp Tyr Arg Asn Ile 1585 1590 1595 1600 Ile Glu Arg Leu Gln Asp Ile Val Ser Ala Leu Glu Asp Arg Leu Arg 1605 1610 1615 Pro Leu Val Gln Ala Glu Leu Ser Val Leu Val Asp Val Leu His Arg 1620 1625 Pro Glu Leu Leu Phe Pro Glu Asn Thr Asp Ala Arq Arq Lys Cys Glu 1640 1645 Ser Gly Gly Phe Ile Cys Lys Leu Ile Lys His Thr Lys Gln Leu Leu 1655 Glu Glu Asn Glu Glu Lys Leu Cys Ile Lys Val Leu Gln Thr Leu Arg 1670 1675 Glu Met Met Thr Lys Asp Arg Gly Tyr Gly Glu Lys Gly Glu Ala Leu 1685 1690 Arg Gln Ile Leu Val Asn Arg Tyr Tyr Gly Asn Ile Arg Pro Ser Gly 1700 1705 1710 Arg Arg Glu Ser Leu Thr Ser Phe Gly Asn Gly Pro Leu Ser Pro Gly 1715 1720 1.725 Gly Pro Ser Lys Pro Gly Gly Gly Gly Gly Pro Gly Ser Gly Ser 1735 1740 Thr Ser Arg Gly Glu Met Ser Leu Ala Glu Val Gln Cys His Leu Asp 1750 1755

Lys Glu	Gly	Ala	Ser 1765		Leu	Val	Ile	Asp 1770		Ile	Met	Asn	Ala 1775	
Ser Asp	Arg	Val 1780		His	Glu	Ser	Ile 1785		Leu	Ala	Ile	Ala 1790		Leu
Glu Gly	Gly 1795		Thr	Thr	Ile	Gln 1800		Ser	Phe	Phe	Cys 1809		Leu	Thr
Glu Asp 181		Lys	Ser	Glu	Lys 1819		Phe	Lys	Val	Phe 1820		Asp	Arg	Met
Lys Val 1825	Ala	Gln	Gln	Glu 1830		Lys	Ala	Thr	Val 1835		Val	Asn	Thr	Ser 1840
Asp Leu	Gly	Asn	Lys 1849		Lys	Asp	Asp	Glu 1850		Asp	Arg	Asp	Ala 1855	
Ser Arg	Lys	Lys 186		Lys	Glu	Pro	Thr 1865		Gln	Ile	Thr	Glu 1870		Val
Arg Asp	1875	5				1880)				1885	5		
Thr Phe		Arg	Glu	Ala	Asp 189		Asp	Asp	His	Tyr 1900		Ser	Gly	Glu
Gly Thr 1905				1910	0				1915	5				1920
Ala Val			1929	5				1930	0				1935	5
Cys Glu		194	0		_		1945	5				1950	כ	
Asn Lys	195	5	_			1960	ם כ				196	5		
Cys Ile 197		Gly	Ser	Thr	Thr 197		Gly	Leu	Gly	Leu 1980		Gly	Leu	Tyr
Ile Asn 1985		_		1990	0				199	5				2000
Thr Glu			200	5				201	0				2019	5
Thr His		202	0				202	5				2030	0	
Asp Ile	203	5		_		204	0				204	5		
Lys Asn 205	0				205	5				206	0			
Asp Ser 2065				207	0				207	5				2080
Leu Val			208	5				209	0				209	5
Glu Asp	Gly	Glu 210		Gly	Glu	Asp	Gly 210		Ala	Ser	Pro	Arg 211		Val
Gly His	211	5	_			212	0				212	5		_
Glu Leu 213	0				213	5				214	0			
Ala Leu 2145				215	0				215	5				2160
Leu Asp	Arg	Thr	Met 216		Gln	Ile	Val	Phe 217		Val	Pro	Ser	Ile 217!	
Glu Phe	Leu	Thr 218		Glu	Ser	Lys	Leu 218		Ile	Tyr	Tyr	Thr 219		Glu
Arg Asp	Glu 219		Gly	Ser	Lys	11e 220		Asp	Phe	Phe	Leu 220		Ser	Glu
Asp Leu 221		Asn	Glu	Met	Asn 221		Gln	Lys	Lys	Leu 222		Ala	Gln	Pro
Val Leu 2225	Tyr	Trp	Cys	Ala 223		Asn	Met	Ser	Phe 223		Ser	Ser	Ile	Ser 2240

Phe Asn Leu Ala	Val Leu Met 2245		Leu Val <i>I</i> 2250	Ala Phe	Phe Tyr I	Pro
Phe Lys Gly Val 2260	_	Thr Leu 2265		His Trp	Ser Gly I 2270	Leu
Leu Trp Thr Ala 2275		2280		2285	5	
Lys Pro His Gly 2290	Ile Arg Ala 229			Thr Ile 2300	Leu Arg I	Leu
Ile Phe Ser Val 2305	2310		2315			2320
Asn Val Cys Asn	2325		2330		2335	
Gly Thr Phe Thr 234	0	2345	5		2350	
Leu Tyr His Leu 2355		2360		2365	5	
His Glu Phe Phe 2370	237	5	2	2380		
Glu Thr Leu Leu 2385	2390		2395			2400
Ile Ile Leu Thr	2405		2410	V	2415	
Ile Val Gly Tyr 242	0	2425	5		2430	
Arg Leu Pro Asn 2435		2440		2445	5	
Asn Asp Phe Leu 2450	245	5	- :	2460	_	
Cys Thr Ser Pro 2465	2470		2475		:	2480
Glu Gln Asp Lys	2485		2490		2495	
Thr Val Leu Ser 250	0	2505	5		2510	
Leu Arg Lys Pro 2515		2520		2525	5	
Tyr Asp Leu Leu 2530	253	5		2540		
Ile Phe Gly Val 2545	2550		2555	_	:	2560
	2565	_	2570		2575	
Glu Arg Asp Lys 258	0	2585	5		2590	
Lys Glu Glu His 2595		2600		2605	5	
Lys Val Lys Asp 2610	261	5		2620		
Glu Met Ile Arg 2625	Glu Arg Asn 2630	Leu Asp	Trp Phe 1 2635	Pro Arg		Ala 2640
Met Ser Leu Val	2645		2650		2655	
Asn Leu Gln Glu 266	0	2665	5		2670	
Ser Gly Gln Leu 2675	Ser Glu Leu	Lys Asp 2680	Gln Met '	Thr Glu 2685		Lys
Gln Lys Gln Arg 2690	269			Pro His 2700	Met Asn	Val
Asn Pro Gln Gln 2705	Pro Ala 2710					

<210> 4 <211> 2749 <212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:/note =
 synthetic construct

Met Ser Asp Lys Met Ser Ser Phe Leu His Ile Gly Asp Ile Cys Ser 10 Leu Tyr Ala Glu Gly Ser Thr Asn Gly Phe Ile Ser Thr Leu Gly Leu 25 Val Asp Asp Arg Cys Val Val Gln Pro Glu Ala Gly Asp Leu Asn Asn 40 Pro Pro Lys Lys Phe Arg Asp Cys Leu Phe Lys Leu Cys Pro Met Asn Arg Tyr Ser Ala Gln Lys Gln Phe Trp Lys Ala Ala Lys Pro Gly Ala Asn Ser Thr Thr Asp Ala Val Leu Leu Asn Lys Leu His His Ala Ala Asp Leu Glu Lys Lys Gln Asn Glu Thr Glu Asn Arg Lys Leu Leu Gly 105 Thr Val Ile Gln Tyr Gly Asn Val Ile Gln Leu Leu His Leu Lys Ser 120 125 Asn Lys Tyr Leu Thr Val Asn Lys Arg Leu Pro Ala Leu Leu Glu Lys 135 140 Asn Ala Met Arg Val Thr Leu Asp Glu Ala Gly Asn Glu Gly Ser Trp 150 155 Phe Tyr Ile Gln Pro Phe Tyr Lys Leu Arg Ser Ile Gly Asp Ser Val 170 165 Val Ile Gly Asp Lys Val Val Leu Asn Pro Val Asn Ala Gly Gln Pro 185 Leu His Ala Ser Ser His Gln Leu Val Asp Asn Pro Gly Cys Asn Glu 200 205 Val Asn Ser Val Asn Cys Asn Thr Ser Trp Lys Ile Val Leu Phe Met 215 Lys Trp Ser Asp Asn Lys Asp Asp Ile Leu Lys Gly Gly Asp Val Val 235 Arg Leu Phe His Ala Glu Glu Lys Phe Leu Thr Cys Asp Glu His 245 Arg Lys Lys Gln His Val Phe Leu Arg Thr Thr Gly Arg Gln Ser Ala 265 Thr Ser Ala Thr Ser Ser Lys Ala Leu Trp Glu Val Glu Val Val Gln 280 His Asp Pro Cys Arg Gly Gly Ala Gly Tyr Trp Asn Ser Leu Phe Arg 295 Phe Lys His Leu Ala Thr Gly His Tyr Leu Ala Ala Glu Val Asp Pro 315 310 Asp Phe Glu Glu Glu Cys Leu Glu Phe Gln Pro Ser Val Asp Pro Asp 325 330 Gln Asp Ala Ser Arg Ser Arg Leu Arg Asn Ala Gln Glu Lys Met Val 345 Tyr Ser Leu Val Ser Val Pro Glu Gly Asn Asp Ile Ser Ser Ile Phe 360 Glu Leu Asp Pro Thr Thr Leu Arg Gly Gly Asp Ser Leu Val Pro Arg 375

Asn Ser Tyr Val Arg Leu Arg His Leu Cys Thr Asn Thr Trp Val His Ser Thr Asn Ile Pro Ile Asp Lys Glu Glu Lys Pro Val Met Leu Lys Ile Gly Thr Ser Pro Leu Lys Glu Asp Lys Glu Ala Phe Ala Ile Val Pro Val Ser Pro Ala Glu Val Arg Asp Leu Asp Phe Ala Asn Asp Ala Ser Lys Val Leu Gly Ser Ile Ala Gly Lys Leu Glu Lys Gly Thr Ile Thr Gln Asn Glu Arg Arg Ser Val Thr Lys Leu Leu Glu Asp Leu Val Tyr Phe Val Thr Gly Gly Thr Asn Ser Gly Gln Asp Val Leu Glu Val Val Phe Ser Lys Pro Asn Arg Glu Arg Gln Lys Leu Met Arg Glu Gln Asn Ile Leu Lys Gln Ile Phe Lys Leu Leu Gln Ala Pro Phe Thr Asp Cys Gly Asp Gly Pro Met Leu Arg Leu Glu Leu Gly Asp Gln Arg His Ala Pro Phe Arg His Ile Cys Arg Leu Cys Tyr Arg Val Leu Arg His Ser Gln Gln Asp Tyr Arg Lys Asn Gln Glu Tyr Ile Ala Lys Gln Phe Gly Phe Met Gln Lys Gln Ile Gly Tyr Asp Val Leu Ala Glu Asp Thr Ile Thr Ala Leu Leu His Asn Asn Arg Lys Leu Leu Glu Lys His Ile Thr Ala Ala Glu Ile Asp Thr Phe Val Ser Leu Val Arg Lys Asn Arg Glu Pro Arg Phe Leu Asp Tyr Leu Ser Asp Leu Cys Val Ser Met Asn Lys Ser Ile Pro Val Thr Gln Glu Leu Ile Cys Lys Ala Val Leu Asn Pro Thr Asn Ala Asp Ile Leu Ile Glu Thr Lys Leu Val Leu Ser Arg Phe Glu Phe Glu Gly Val Ser Thr Gly Glu Asn Ala Leu Glu Ala Gly Glu Asp Glu Glu Glu Val Trp Leu Phe Trp Arg Asp Ser Asn Lys Glu Ile Arg Ser Lys Ser Val Arg Glu Leu Ala Gln Asp Ala Lys Glu Gly Gln Lys Glu Asp Arg Asp Val Leu Ser Tyr Tyr Arg Tyr Gln Leu Asn Leu Phe Ala Arg Met Cys Leu Asp Arg Gln Tyr Leu Ala Ile Asn Glu Ile Ser Gly Gln Leu Asp Val Asp Leu Ile Leu Arg Cys Met Ser Asp Glu Asn Leu Pro Tyr Asp Leu Arg Ala Ser Phe Cys Arg Leu Met Leu His Met His Val Asp Arg Asp Pro Gln Glu Gln Val Thr Pro Val Lys Tyr Ala Arg Leu Trp Ser Glu Ile Pro Ser Glu Ile Ala Ile Asp Asp Tyr Asp Ser Ser Gly Ala Ser Lys Asp Glu Ile Lys Glu Arg Phe Ala Gln Thr Met Glu Phe Val Glu Glu Tyr Leu Arg Asp Val Val Cys Gln Arg Phe Pro Phe Ser Asp Lys Glu Lys Asn Lys Leu Thr Phe

Glu Val Val Asn Leu Ala Arg Asn Leu Ile Tyr Phe Gly Phe Tyr Asn 875 870 Phe Ser Asp Leu Leu Arg Leu Thr Lys Ile Leu Leu Ala Ile Leu Asp 890 Cys Val His Val Thr Thr Ile Phe Pro Ile Ser Lys Met Thr Lys Gly 905 Glu Glu Asn Lys Gly Ser Asn Val Met Arg Ser Ile His Gly Val Gly 920 Glu Leu Met Thr Gln Val Val Leu Arg Gly Gly Phe Leu Pro Met 935 Thr Pro Met Ala Ala Pro Glu Gly Asn Val Lys Gln Ala Glu Pro 950 955 Glu Lys Glu Asp Ile Met Val Met Asp Thr Lys Leu Lys Ile Ile Glu 970 965 Ile Leu Gln Phe Ile Leu Asn Val Arg Leu Asp Tyr Arg Ile Ser Cys 985 980 Leu Leu Cys Ile Phe Lys Arg Glu Phe Asp Glu Ser Asn Ser Gln Ser 995 1000 1005 Ser Glu Thr Ser Ser Gly Asn Ser Ser Gln Glu Gly Pro Ser Asn Val 1015 1020 Pro Gly Ala Leu Asp Phe Glu His Ile Glu Glu Gln Ala Glu Gly Ile 1030 1035 Phe Gly Gly Ser Glu Glu Asn Thr Pro Leu Asp Leu Asp Asp His Gly 1045 1050 Gly Arg Thr Phe Leu Arg Val Leu Leu His Leu Thr Met His Asp Tyr 1060 1065 1070 Pro Pro Leu Val Ser Gly Ala Leu Gln Leu Leu Phe Arg His Phe Ser 1080 1085 Gln Arq Gln Glu Val Leu Gln Ala Phe Lys Gln Val Gln Leu Leu Val 1095 1100 Thr Ser Gln Asp Val Asp Asn Tyr Lys Gln Ile Lys Gln Asp Leu Asp 1115 1110 Gln Leu Arg Ser Ile Val Glu Lys Ser Glu Leu Trp Val Tyr Lys Gly 1130 1125 Gln Gly Pro Asp Glu Pro Met Asp Gly Ala Ser Gly Glu Asn Glu His 1140 1145 Lys Lys Thr Glu Glu Gly Thr Ser Lys Pro Leu Lys His Glu Ser Thr 1155 1160 1165 Ser Ser Tyr Asn Tyr Arg Val Val Lys Glu Ile Leu Ile Arg Leu Ser 1170 1175 1180 Lys Leu Cys Val Gln Glu Ser Ala Ser Val Arg Lys Ser Arg Lys Gln 1190 1195 Gln Gln Arg Leu Leu Arg Asn Met Gly Ala His Ala Val Val Leu Glu 1205 1210 Leu Leu Gln Ile Pro Tyr Glu Lys Ala Glu Asp Thr Lys Met Gln Glu 1225 Ile Met Arg Leu Ala His Glu Phe Leu Gln Asn Phe Cys Ala Gly Asn 1240 Gln Gln Asn Gln Ala Leu Leu His Lys His Ile Asn Leu Phe Leu Asn 1255 1260 Pro Gly Ile Leu Glu Ala Val Thr Met Gln His Ile Phe Met Asn Asn 1270 1275 Phe Gln Leu Cys Ser Glu Ile Asn Glu Arg Val Val Gln His Phe Val 1285 1290 His Cys Ile Glu Thr His Gly Arg Asn Val Gln Tyr Ile Lys Phe Leu 1305 1300 Gln Thr Ile Val Lys Ala Glu Gly Lys Phe Ile Lys Lys Cys Gln Asp 1320 1325 Met Val Met Ala Glu Leu Val Asn Ser Gly Glu Asp Val Leu Val Phe 1330 1335 1340

Tyr Asn Asp Arg Ala Ser Phe Gln Thr Leu Ile Gln Met Met Arg Ser 1350 1355 Glu Arg Asp Arg Met Asp Glu Asn Ser Pro Leu Phe Met Tyr His Ile 1365 1370 His Leu Val Glu Leu Leu Ala Val Cys Thr Glu Gly Lys Asn Val Tyr 1380 1385 Thr Glu Ile Lys Cys Asn Ser Leu Leu Pro Leu Asp Asp Ile Val Arq 1395 1400 1405 Val Val Thr His Glu Asp Cys Ile Pro Glu Val Lys Ile Ala Tyr Ile 1410 1415 1420 Asn Phe Leu Asn His Cys Tyr Val Asp Thr Glu Val Glu Met Lys Glu 1430 1435 Ile Tyr Thr Ser Asn His Met Trp Lys Leu Phe Glu Asn Phe Leu Val 1445 1450 1455 Asp Ile Cys Arg Ala Cys Asn Asn Thr Ser Asp Arg Lys His Ala Asp 1460 1465 1470 Ser Val Leu Glu Lys Tyr Val Thr Glu Ile Val Met Ser Ile Val Thr 1475 1480 1485 Thr Phe Phe Ser Ser Pro Phe Ser Asp Gln Ser Thr Thr Leu Gln Thr 1490 1495 1500 Arg Gln Pro Val Phe Val Gln Leu Leu Gln Gly Val Phe Arg Val Tyr 1505 1510 1515 His Cys Asn Trp Leu Met Pro Ser Gln Lys Ala Ser Val Glu Ser Cys 1525 1530 1535 Ile Arg Val Leu Ser Asp Val Ala Lys Ser Arg Ala Ile Ala Ile Pro 1540 1545 1550 Val Asp Leu Asp Ser Gln Val Asn Asn Leu Phe Leu Lys Ser His Asn 1555 1560 1565 Ile Val Gln Lys Thr Ala Met Asn Trp Arg Leu Ser Ala Arg Asn Ala 1570 1575 1580 Ala Arg Arg Asp Asp Val Leu Ala Ala Ser Arg Asp Tyr Arg Asn Ile 1585 1590 1595 **1**600 Ile Glu Arg Leu Gln Asp Ile Val Ser Ala Leu Glu Asp Arg Leu Arg 1605 1610 Pro Leu Val Gln Ala Glu Leu Ser Val Leu Val Asp Val Leu His Arg 1620 1625 1630 Pro Glu Leu Leu Phe Pro Glu Asn Thr Asp Ala Arg Arg Lys Cys Glu 1635 1640 1645 Ser Gly Gly Phe Ile Cys Lys Leu Ile Lys His Thr Lys Gln Leu Leu 1650 1655 1660 Glu Glu Asn Glu Glu Lys Leu Cys Ile Lys Val Leu Gln Thr Leu Arg 1670 1675 Glu Met Met Thr Lys Asp Arg Gly Tyr Gly Glu Lys Gln Ile Ser Ile 1685 1690 Asp Glu Leu Glu Asn Ala Glu Leu Pro Gln Pro Pro Glu Ala Glu Asn 1700 1705 1710 Ser Thr Glu Glu Leu Glu Pro Ser Pro Pro Leu Arg Gln Leu Glu Asp 1715 1720 1725 His Lys Arg Gly Glu Ala Leu Arg Gln Ile Leu Val Asn Arg Tyr Tyr 1730 1735 1740 Gly Asn Ile Arg Pro Ser Gly Arg Arg Glu Ser Leu Thr Ser Phe Gly 1745 1750 1755 1760 Asn Gly Pro Leu Ser Pro Gly Gly Pro Ser Lys Pro Gly Gly Gly 1765 1770 1775 Gly Gly Pro Gly Ser Gly Ser Thr Ser Arg Gly Glu Met Ser Leu Ala 1780 1785 1790 Glu Val Gln Cys His Leu Asp Lys Glu Gly Ala Ser Asn Leu Val Ile 1795 1800 1805 Asp Leu Ile Met Asn Ala Ser Ser Asp Arg Val Phe His Glu Ser Ile 1815

1825	Ala Leu Leu 1830	Glu Gly G	ly Asn Thr 1835	Thr Ile Gln His 1840
Ser Phe Phe Cys A		Glu Asp L		·
_	1845		850	1855
Lys Val Phe Tyr A	Asp Arg Met		la Gln Gln	
1860		1865		1870
Thr Val Thr Val A	Asn Thr Ser		Hy Asn Lys	Lys Lys Asp Asp 1885
1875 Glu Val Asp Arg A	Nen Ala Pro	1880 Ser Arg L	ve Ive Ala	
1890	1895		1900	
Thr Gln Ile Thr (ln Leu Leu	Glu Ala Ser Ala
1905	1910		1915	1920
Ala Thr Arg Lys A				
Asp His Tyr Gln S	1925		.930	Thr Acp Lyc Ala
ASP HIS TYP GIR S	_	1945	III AIA IIII	1950
Lys Asp Asp Leu (le Thr Ile	
1955		1960		1965
Leu Arg Phe Leu (_		
1970	1975		1980	
Asn Phe Leu Arg (Cys Gin Ash 1990	Asn Lys T	1995	2000
Glu Thr Leu Gln 1		Cys Ile C		
	2005	2	010	2015
Leu Gly Leu Leu (Gly Leu Tyr	Ile Asn G	lu Lys Asn	Val Ala Leu Ile
2020		2025		2030
Asn Gln Thr Leu (Glu Ser Leu	Thr Glu T	yr Cys Gin	2045
Glu Asn Gln Asn (Cvs Tle Ala		lu Ser Asn	
2050	2055		2060	
Ile Thr Ala Leu	Ile Leu Asn	Asp Ile A		Gly Lys Lys Arg
2065	2070		2075	2080
Met Asp Leu Val				
Met Asp Leu Val	2085	2	090	2095
Met Asp Leu Val	2085 Ser Arg His	2	090	2095
Met Asp Leu Val I Z Ala Ile Met Glu S	2085 Ser Arg His Pro Lys Glu	Asp Ser G 2105 Leu Val G	090 Glu Asn Ala	2095 Glu Arg Ile Leu 2110 Lys Lys Ala Tyr
Met Asp Leu Val 1 Ala Ile Met Glu 2 2100 Tyr Asn Met Arg 1 2115	2085 Ser Arg His Pro Lys Glu	Asp Ser G 2105 Leu Val G 2120	090 Slu Asn Ala Slu Val Ile	2095 Glu Arg Ile Leu 2110 Lys Lys Ala Tyr 2125
Met Asp Leu Val 1 Ala Ile Met Glu 3 2100 Tyr Asn Met Arg 1 2115 Met Gln Gly Glu 3	2085 Ser Arg His Pro Lys Glu Val Glu Phe	Asp Ser G 2105 Leu Val G 2120 Glu Asp G	3090 Glu Asn Ala Glu Val Ile Gly Glu Asn	Glu Arg Ile Leu 2110 Lys Lys Ala Tyr 2125 Gly Glu Asp Gly
Met Asp Leu Val 1 Ala Ile Met Glu 2 2100 Tyr Asn Met Arg 1 2115 Met Gln Gly Glu 2 2130	2085 Ser Arg His Pro Lys Glu Val Glu Phe 2135	Asp Ser G 2105 Leu Val G 2120 Glu Asp G	090 Glu Asn Ala Glu Val Ile Gly Glu Asn 2140	2095 Glu Arg Ile Leu 2110 Lys Lys Ala Tyr 2125 Gly Glu Asp Gly
Met Asp Leu Val 1 Ala Ile Met Glu 3 2100 Tyr Asn Met Arg 1 2115 Met Gln Gly Glu 3	2085 Ser Arg His Pro Lys Glu Val Glu Phe 2135	Asp Ser G 2105 Leu Val G 2120 Glu Asp G	090 Glu Asn Ala Glu Val Ile Gly Glu Asn 2140	2095 Glu Arg Ile Leu 2110 Lys Lys Ala Tyr 2125 Gly Glu Asp Gly
Met Asp Leu Val 1 Ala Ile Met Glu 3 2100 Tyr Asn Met Arg 1 2115 Met Gln Gly Glu 3 2130 Ala Ala Ser Pro 2	2085 Ser Arg His Pro Lys Glu Val Glu Phe 2135 Arg Asn Val 2150	Asp Ser G 2105 Leu Val G 2120 Glu Asp G Gly His A	3090 Slu Asn Ala Slu Val Ile Sly Glu Asn 2140 Asn Ile Tyr 2155 Sln Thr Met	2095 Glu Arg Ile Leu 2110 Lys Lys Ala Tyr 2125 Gly Glu Asp Gly Ile Leu Ala His 2160 Leu Lys Pro Gly
Met Asp Leu Val 1 Ala Ile Met Glu 3 2100 Tyr Asn Met Arg 1 2115 Met Gln Gly Glu 3 2130 Ala Ala Ser Pro 2 2145 Gln Leu Ala Arg 1	2085 Ser Arg His Pro Lys Glu Val Glu Phe 2135 Arg Asn Val 2150 His Asn Lys 2165	Asp Ser G 2105 Leu Val G 2120 Glu Asp G Gly His A Glu Leu G	3090 Glu Asn Ala Glu Val Ile Gly Glu Asn 2140 Asn Ile Tyr 2155 Gln Thr Met	2095 Glu Arg Ile Leu 2110 Lys Lys Ala Tyr 2125 Gly Glu Asp Gly Ile Leu Ala His 2160 Leu Lys Pro Gly 2175
Met Asp Leu Val 1 Ala Ile Met Glu 3 2100 Tyr Asn Met Arg 1 2115 Met Gln Gly Glu 3 2130 Ala Ala Ser Pro 2 2145 Gln Leu Ala Arg 1 Gly Gln Val Asp 6	2085 Ser Arg His Pro Lys Glu Val Glu Phe 2135 Arg Asn Val 2150 His Asn Lys 2165 Gly Asp Glu	Asp Ser G 2105 Leu Val G 2120 Glu Asp G Gly His A Glu Leu G Ala Leu G	3090 Glu Asn Ala Glu Val Ile Gly Glu Asn 2140 Asn Ile Tyr 2155 Gln Thr Met	2095 Glu Arg Ile Leu 2110 Lys Lys Ala Tyr 2125 Gly Glu Asp Gly Ile Leu Ala His 2160 Leu Lys Pro Gly 2175 Ala Lys His Thr
Met Asp Leu Val 1 Ala Ile Met Glu 3 2100 Tyr Asn Met Arg 1 2115 Met Gln Gly Glu 3 2130 Ala Ala Ser Pro 2 2145 Gln Leu Ala Arg 1 Gly Gln Val Asp 6 2180	2085 Ser Arg His Pro Lys Glu Val Glu Phe 2135 Arg Asn Val 2150 His Asn Lys 2165 Gly Asp Glu	Asp Ser G 2105 Leu Val G 2120 Glu Asp G Gly His A Glu Leu G Ala Leu G 2185	Slu Asn Ala Slu Val Ile Sly Glu Asn 2140 Asn Ile Tyr 2155 Sln Thr Met 2170 Slu Phe Tyr	2095 Glu Arg Ile Leu 2110 Lys Lys Ala Tyr 2125 Gly Glu Asp Gly Ile Leu Ala His 2160 Leu Lys Pro Gly 2175 Ala Lys His Thr 2190
Met Asp Leu Val 1 Ala Ile Met Glu 3 2100 Tyr Asn Met Arg 1 2115 Met Gln Gly Glu 3 2130 Ala Ala Ser Pro 2 2145 Gln Leu Ala Arg 1 Gly Gln Val Asp 6	2085 Ser Arg His Pro Lys Glu Val Glu Phe 2135 Arg Asn Val 2150 His Asn Lys 2165 Gly Asp Glu	Asp Ser G 2105 Leu Val G 2120 Glu Asp G Gly His A Glu Leu G Ala Leu G 2185	Slu Asn Ala Slu Val Ile Sly Glu Asn 2140 Asn Ile Tyr 2155 Sln Thr Met 2170 Slu Phe Tyr	2095 Glu Arg Ile Leu 2110 Lys Lys Ala Tyr 2125 Gly Glu Asp Gly Ile Leu Ala His 2160 Leu Lys Pro Gly 2175 Ala Lys His Thr 2190
Met Asp Leu Val 1 Ala Ile Met Glu 3 2100 Tyr Asn Met Arg 1 2115 Met Gln Gly Glu 3 2130 Ala Ala Ser Pro 2 2145 Gln Leu Ala Arg 1 Gly Gln Val Asp 6 2180 Ala Gln Ile Glu 3	2085 Ser Arg His Pro Lys Glu Val Glu Phe 2135 Arg Asn Val 2150 His Asn Lys 2165 Gly Asp Glu Ile Val Arg	Asp Ser G 2105 Leu Val G 2120 Glu Asp G Gly His A Glu Leu G 2185 Leu Asp A 2200	Slu Asn Ala Glu Val Ile Gly Glu Asn 2140 Asn Ile Tyr 2155 Gln Thr Met 2170 Glu Phe Tyr	2095 Glu Arg Ile Leu 2110 Lys Lys Ala Tyr 2125 Gly Glu Asp Gly Ile Leu Ala His 2160 Leu Lys Pro Gly 2175 Ala Lys His Thr 2190 Glu Gln Ile Val
Met Asp Leu Val 1 Ala Ile Met Glu 3 2100 Tyr Asn Met Arg 1 2115 Met Gln Gly Glu 3 2130 Ala Ala Ser Pro 2 2145 Gln Leu Ala Arg 1 Gly Gln Val Asp 6 2180 Ala Gln Ile Glu 2 2195 Phe Pro Val Pro 2 2210	2085 Ser Arg His Pro Lys Glu Val Glu Phe 2135 Arg Asn Val 2150 His Asn Lys 2165 Gly Asp Glu Ile Val Arg Ser Ile Cys 2215	Asp Ser G 2105 Leu Val G 2120 Glu Asp G Gly His A Glu Leu G 2185 Leu Asp A 2200 Glu Phe L	Slu Asn Ala Glu Val Ile Gly Glu Asn 2140 Asn Ile Tyr 2155 Gln Thr Met 2170 Glu Phe Tyr Arg Thr Met Lys 2220	Glu Arg Ile Leu 2110 Lys Lys Ala Tyr 2125 Gly Glu Asp Gly Ile Leu Ala His 2160 Leu Lys Pro Gly 2175 Ala Lys His Thr 2190 Glu Gln Ile Val 2205 Glu Ser Lys Leu
Met Asp Leu Val 1 Ala Ile Met Glu 3 2100 Tyr Asn Met Arg 1 2115 Met Gln Gly Glu 2 2130 Ala Ala Ser Pro 2 2145 Gln Leu Ala Arg 1 Gly Gln Val Asp 6 2180 Ala Gln Ile Glu 2 2195 Phe Pro Val Pro 2 2210 Arg Ile Tyr Tyr	2085 Ser Arg His Pro Lys Glu Val Glu Phe 2135 Arg Asn Val 2150 His Asn Lys 2165 Gly Asp Glu Ile Val Arg Ser Ile Cys 2215 Thr Thr Glu	Asp Ser G 2105 Leu Val G 2120 Glu Asp G Gly His A Glu Leu G 2185 Leu Asp A 2200 Glu Phe L	Slu Asn Ala Glu Val Ile Gly Glu Asn 2140 Asn Ile Tyr 2155 Gln Thr Met 2170 Glu Phe Tyr Arg Thr Met Leu Thr Lys 2220 Glu Gln Gly	Glu Arg Ile Leu 2110 Lys Lys Ala Tyr 2125 Gly Glu Asp Gly Ile Leu Ala His 2160 Leu Lys Pro Gly 2175 Ala Lys His Thr 2190 Glu Gln Ile Val 2205 Glu Ser Lys Leu Ser Lys Ile Asn
Met Asp Leu Val 1 Ala Ile Met Glu 3 2100 Tyr Asn Met Arg 1 2115 Met Gln Gly Glu 3 2130 Ala Ala Ser Pro 2 2145 Gln Leu Ala Arg 1 Gly Gln Val Asp 6 2180 Ala Gln Ile Glu 2 2195 Phe Pro Val Pro 2 2210 Arg Ile Tyr Tyr 3	2085 Ser Arg His Pro Lys Glu Val Glu Phe 2135 Arg Asn Val 2150 His Asn Lys 2165 Gly Asp Glu Ile Val Arg Ser Ile Cys 2215 Thr Thr Glu 2230	Asp Ser G 2105 Leu Val G 2120 Glu Asp G Gly His A Glu Leu G 2185 Leu Asp A 2200 Glu Phe L Arg Asp G	Slu Asn Ala Glu Val Ile Gly Glu Asn 2140 Asn Ile Tyr 2155 Gln Thr Met 2170 Glu Phe Tyr Arg Thr Met Leu Thr Lys 2220 Glu Gln Gly 2235	2095 Glu Arg Ile Leu 2110 Lys Lys Ala Tyr 2125 Gly Glu Asp Gly Ile Leu Ala His 2160 Leu Lys Pro Gly 2175 Ala Lys His Thr 2190 Glu Gln Ile Val 2205 Glu Ser Lys Leu Ser Lys Ile Asn 2240
Met Asp Leu Val 1 Ala Ile Met Glu 3 2100 Tyr Asn Met Arg 1 2115 Met Gln Gly Glu 2 2130 Ala Ala Ser Pro 2 2145 Gln Leu Ala Arg 1 Gly Gln Val Asp 6 2180 Ala Gln Ile Glu 2 2195 Phe Pro Val Pro 2 2210 Arg Ile Tyr Tyr 2 2225 Asp Phe Phe Leu 1	2085 Ser Arg His Pro Lys Glu Val Glu Phe 2135 Arg Asn Val 2150 His Asn Lys 2165 Gly Asp Glu Ile Val Arg Ser Ile Cys 2215 Thr Thr Glu 2230	Asp Ser G 2105 Leu Val G 2120 Glu Asp G Gly His A Glu Leu G 2185 Leu Asp A 2200 Glu Phe L Arg Asp C Asp Leu P	Slu Asn Ala Glu Val Ile Gly Glu Asn 2140 Asn Ile Tyr 2155 Gln Thr Met 2170 Glu Phe Tyr Arg Thr Met Leu Thr Lys 2220 Glu Gln Gly 2235	2095 Glu Arg Ile Leu 2110 Lys Lys Ala Tyr 2125 Gly Glu Asp Gly Ile Leu Ala His 2160 Leu Lys Pro Gly 2175 Ala Lys His Thr 2190 Glu Gln Ile Val 2205 Glu Ser Lys Leu Ser Lys Ile Asn 2240
Met Asp Leu Val 1 Ala Ile Met Glu 3 2100 Tyr Asn Met Arg 1 2115 Met Gln Gly Glu 2 2130 Ala Ala Ser Pro 2 2145 Gln Leu Ala Arg 1 Gly Gln Val Asp 6 2180 Ala Gln Ile Glu 2 2195 Phe Pro Val Pro 2 2210 Arg Ile Tyr Tyr 2 2225 Asp Phe Phe Leu 1	2085 Ser Arg His Pro Lys Glu Val Glu Phe 2135 Arg Asn Val 2150 His Asn Lys 2165 Gly Asp Glu Ile Val Arg Ser Ile Cys 2215 Thr Thr Glu 2230 Arg Ser Glu 2245	Asp Ser G 2105 Leu Val G 2120 Glu Asp G Gly His A Glu Leu G 2185 Leu Asp A 2200 Glu Phe L Arg Asp G Asp Leu P	Slu Asn Ala Glu Val Ile Gly Glu Asn 2140 Asn Ile Tyr 2155 Gln Thr Met 2170 Glu Phe Tyr Arg Thr Met Leu Thr Lys 2220 Glu Gln Gly 2235 Phe Asn Glu	2095 Glu Arg Ile Leu 2110 Lys Lys Ala Tyr 2125 Gly Glu Asp Gly Ile Leu Ala His 2160 Leu Lys Pro Gly 2175 Ala Lys His Thr 2190 Glu Gln Ile Val 2205 Glu Ser Lys Leu Ser Lys Ile Asn 2240 Met Asn Trp Gln 2255
Met Asp Leu Val 1 Ala Ile Met Glu 3 2100 Tyr Asn Met Arg 1 2115 Met Gln Gly Glu 3 2130 Ala Ala Ser Pro 2 2145 Gln Leu Ala Arg 1 Gly Gln Val Asp 6 2180 Ala Gln Ile Glu 2 2195 Phe Pro Val Pro 2 2210 Arg Ile Tyr Tyr 2 2225 Asp Phe Phe Leu Arg 2	2085 Ser Arg His Pro Lys Glu Val Glu Phe 2135 Arg Asn Val 2150 His Asn Lys 2165 Gly Asp Glu Ile Val Arg Ser Ile Cys 2215 Thr Thr Glu 2230 Arg Ser Glu 2245 Ala Gln Pro	Asp Ser G 2105 Leu Val G 2120 Glu Asp G Gly His A Glu Leu G 2185 Leu Asp A 2200 Glu Phe L Arg Asp G Asp Leu P 2 Val Leu T 2265	Sin Asn Ala Sin Val Ile Siy Glu Asn 2140 Asn Ile Tyr 2155 Sin Thr Met 2170 Sin Phe Tyr Arg Thr Met Leu Thr Lys 2220 Sin Gln Gly 2235 Phe Asn Glu 2250 Tyr Trp Cys	2095 Glu Arg Ile Leu 2110 Lys Lys Ala Tyr 2125 Gly Glu Asp Gly Ile Leu Ala His 2160 Leu Lys Pro Gly 2175 Ala Lys His Thr 2190 Glu Gln Ile Val 2205 Glu Ser Lys Leu Ser Lys Ile Asn 2240 Met Asn Trp Gln 2255 Ala Arg Asn Met 2270
Met Asp Leu Val 1 Ala Ile Met Glu 3 2100 Tyr Asn Met Arg 1 2115 Met Gln Gly Glu 2 2130 Ala Ala Ser Pro 2 2145 Gln Leu Ala Arg 1 Gly Gln Val Asp 6 2180 Ala Gln Ile Glu 2 2195 Phe Pro Val Pro 2 2210 Arg Ile Tyr Tyr 2 2225 Asp Phe Phe Leu Arg 2 Constant of the Ser Phe Trp Ser 1	2085 Ser Arg His Pro Lys Glu Val Glu Phe 2135 Arg Asn Val 2150 His Asn Lys 2165 Gly Asp Glu Ile Val Arg Ser Ile Cys 2215 Thr Thr Glu 2230 Arg Ser Glu 2245 Ala Gln Pro	Asp Ser G 2105 Leu Val G 2120 Glu Asp G Gly His A Glu Leu G 2185 Leu Asp A 2200 Glu Phe L Arg Asp G Asp Leu P 2265 Phe Asn L	Sin Asn Ala Sin Val Ile Siy Glu Asn 2140 Asn Ile Tyr 2155 Sin Thr Met 2170 Sin Phe Tyr Arg Thr Met Leu Thr Lys 2220 Sin Gln Gly 2235 Phe Asn Glu 2250 Tyr Trp Cys	2095 Glu Arg Ile Leu 2110 Lys Lys Ala Tyr 2125 Gly Glu Asp Gly Ile Leu Ala His 2160 Leu Lys Pro Gly 2175 Ala Lys His Thr 2190 Glu Gln Ile Val 2205 Glu Ser Lys Leu Ser Lys Ile Asn 2240 Met Asn Trp Gln 2255 Ala Arg Asn Met 2270 Leu Met Asn Leu
Met Asp Leu Val 1 Ala Ile Met Glu 2 2100 Tyr Asn Met Arg 1 2115 Met Gln Gly Glu 2 2130 Ala Ala Ser Pro 2 2145 Gln Leu Ala Arg 1 Gly Gln Val Asp 6 2180 Ala Gln Ile Glu 2 2195 Phe Pro Val Pro 2 2210 Arg Ile Tyr Tyr 2 2225 Asp Phe Phe Leu Arg 2 6 Ser Phe Trp Ser 2 275	2085 Ser Arg His Pro Lys Glu Val Glu Phe 2135 Arg Asn Val 2150 His Asn Lys 2165 Gly Asp Glu Ile Val Arg Ser Ile Cys 2215 Thr Thr Glu 2230 Arg Ser Glu 2245 Ala Gln Pro Ser Ile Ser	Asp Ser G 2105 Leu Val G 2120 Glu Asp G Gly His A Glu Leu G 2185 Leu Asp A 2200 Glu Phe L Arg Asp G Asp Leu P 24 Val Leu T 2265 Phe Asn L	Siu Asn Ala Siu Val Ile Siy Glu Asn 2140 Asn Ile Tyr 2155 Sin Thr Met 2170 Siu Phe Tyr Arg Thr Met Leu Thr Lys 2220 Siu Gln Gly 2235 Phe Asn Glu 2250 Tyr Trp Cys Leu Ala Val	2095 Glu Arg Ile Leu 2110 Lys Lys Ala Tyr 2125 Gly Glu Asp Gly Ile Leu Ala His 2160 Leu Lys Pro Gly 2175 Ala Lys His Thr 2190 Glu Gln Ile Val 2205 Glu Ser Lys Leu Ser Lys Ile Asn 2240 Met Asn Trp Gln 2255 Ala Arg Asn Met 2270 Leu Met Asn Leu 2285
Met Asp Leu Val 1 Ala Ile Met Glu 3 2100 Tyr Asn Met Arg 1 2115 Met Gln Gly Glu 2 2130 Ala Ala Ser Pro 2 2145 Gln Leu Ala Arg 1 Gly Gln Val Asp 6 2180 Ala Gln Ile Glu 2 2195 Phe Pro Val Pro 2 2210 Arg Ile Tyr Tyr 2 2225 Asp Phe Phe Leu Arg 2 Constant of the Ser Phe Trp Ser 1	2085 Ser Arg His Pro Lys Glu Val Glu Phe 2135 Arg Asn Val 2150 His Asn Lys 2165 Gly Asp Glu Ile Val Arg Ser Ile Cys 2215 Thr Thr Glu 2230 Arg Ser Glu 2245 Ala Gln Pro Ser Ile Ser	Asp Ser G 2105 Leu Val G 2120 Glu Asp G Gly His A Glu Leu G 2185 Leu Asp A 2200 Glu Phe L Arg Asp G Asp Leu P 2265 Phe Asn L 2280 Phe Lys G	Siu Asn Ala Siu Val Ile Siy Glu Asn 2140 Asn Ile Tyr 2155 Sin Thr Met 2170 Siu Phe Tyr Arg Thr Met Leu Thr Lys 2220 Siu Gln Gly 2235 Phe Asn Glu 2250 Tyr Trp Cys Leu Ala Val	2095 Glu Arg Ile Leu 2110 Lys Lys Ala Tyr 2125 Gly Glu Asp Gly Ile Leu Ala His 2160 Leu Lys Pro Gly 2175 Ala Lys His Thr 2190 Glu Gln Ile Val 2205 Glu Ser Lys Leu Ser Lys Ile Asn 2240 Met Asn Trp Gln 2255 Ala Arg Asn Met 2270 Leu Met Asn Leu 2285 Gly Gly Thr Leu

2305	Ser Gly Leu 2310	Leu Trp Th	nr Ala Met 2315	Leu Ile	Ser Leu 2320
Ala Ile Val Ile	Ala Leu Pro 2325		is Gly Ile 330		Leu Ile 2335
Ala Ser Thr Ile		Ile Phe Se	er Val Gly	Leu Gln 2350	
Leu Phe Leu Leu 2355	Gly Ala Phe	Asn Val Cy 2360	ys Asn Lys	Ile Ile 2365	Phe Leu
Met Ser Phe Val 2370	Gly Asn Cys 237		ne Thr Arg 2380		Arg Ala
Met Val Leu Asp 2385	Val Glu Phe 2390	Leu Tyr Hi	is Leu Leu 2395	Tyr Leu	Leu Ile 2400
Cys Ala Met Gly	Leu Phe Val 2405		ne Phe Tyr 110		Leu Leu 2415
Phe Asp Leu Val 242		Glu Thr Le 2425	eu Leu Asn	Val Ile 2430	_
Val Thr Arg Asn 2435		2440		2445	
Ile Leu Val Tyr 2450	Leu Phe Ser 245		ly Tyr Leu 2460		Lys Asp
Asp Phe Ile Leu 2465	Glu Val Asp 2470	Arg Leu Pr	ro Asn Glu 2475	Thr Ala	Gly Pro 2480
Glu Thr Gly Glu	Ser Leu Ala 2485		ne Leu Tyr 190		Val Cys 2495
Arg Val Glu Thr 250		Cys Thr Se 2505	er Pro Ala	Pro Lys 2510	
Leu Leu Pro Val 2515		2520		2525	_
Thr Leu Leu Met 2530	Cys Ile Val 253		2540)	_
Gly Gly Gly Val 2545	2550		2555		2560
2545 Leu Phe Ala Ala	2550 Arg Val Ile 2565	Tyr Asp Le	2555 eu Leu Phe 570	Phe Phe	2560 Met Val 2575
2545 Leu Phe Ala Ala Ile Ile Ile Val 258	2550 Arg Val Ile 2565 Leu Asn Leu 0	Tyr Asp Le 25 Ile Phe Gl 2585	2555 eu Leu Phe 570 ly Val Ile	Phe Phe Ile Asp 2590	2560 Met Val 2575 Thr Phe
2545 Leu Phe Ala Ala Ile Ile Ile Val 258 Ala Asp Leu Arg 2595	2550 Arg Val Ile 2565 Leu Asn Leu 0 Ser Glu Lys	Tyr Asp Le 25 Ile Phe Gl 2585 Gln Lys Ly 2600	2555 eu Leu Phe 570 Ly Val Ile /s Glu Glu	Phe Phe Ile Asp 2590 Ile Leu 2605	2560 Met Val 2575 Thr Phe Lys Thr
2545 Leu Phe Ala Ala Ile Ile Ile Val 258 Ala Asp Leu Arg 2595 Thr Cys Phe Ile 2610	2550 Arg Val Ile 2565 Leu Asn Leu 0 Ser Glu Lys Cys Gly Leu 261	Tyr Asp Le 25 Ile Phe Gl 2585 Gln Lys Ly 2600 Glu Arg As	2555 eu Leu Phe 570 ly Val Ile ys Glu Glu sp Lys Phe 2620	Phe Phe Ile Asp 2590 Ile Leu 2605 Asp Asn	2560 Met Val 2575 Thr Phe Lys Thr
Leu Phe Ala Ala Ile Ile Ile Val 258 Ala Asp Leu Arg 2595 Thr Cys Phe Ile 2610 Val Thr Phe Glu 2625	2550 Arg Val Ile 2565 Leu Asn Leu 0 Ser Glu Lys Cys Gly Leu 261 Glu His Ile 2630	Tyr Asp Le 25 Ile Phe Gl 2585 Gln Lys Ly 2600 Glu Arg As 5 Lys Glu Gl	2555 eu Leu Phe 570 ly Val Ile 78 Glu Glu sp Lys Phe 2620 lu His Asn 2635	Phe Phe Ile Asp 2590 Ile Leu 2605 Asp Asn Met Trp	2560 Met Val 2575 Thr Phe Lys Thr Lys Thr His Tyr 2640
Leu Phe Ala Ala Ile Ile Ile Val 258 Ala Asp Leu Arg 2595 Thr Cys Phe Ile 2610 Val Thr Phe Glu 2625 Leu Cys Phe Ile	2550 Arg Val Ile 2565 Leu Asn Leu 0 Ser Glu Lys Cys Gly Leu 261 Glu His Ile 2630 Val Leu Val 2645	Tyr Asp Le 25 Ile Phe Gl 2585 Gln Lys Ly 2600 Glu Arg As Lys Glu Gl Lys Val Ly 26	2555 Eu Leu Phe 570 Ly Val Ile 78 Glu Glu Ep Lys Phe 2620 Lu His Asn 2635 78 Asp Ser	Phe Phe Ile Asp 2590 Ile Leu 2605 Asp Asn Met Trp Thr Glu	2560 Met Val 2575 Thr Phe Lys Thr Lys Thr His Tyr 2640 Tyr Thr 2655
Leu Phe Ala Ala Ile Ile Ile Val 258 Ala Asp Leu Arg 2595 Thr Cys Phe Ile 2610 Val Thr Phe Glu 2625 Leu Cys Phe Ile Gly Pro Glu Ser 266	2550 Arg Val Ile 2565 Leu Asn Leu 0 Ser Glu Lys Cys Gly Leu 261 Glu His Ile 2630 Val Leu Val 2645 Tyr Val Ala	Tyr Asp Le 25 Ile Phe Gl 2585 Gln Lys Ly 2600 Glu Arg As 5 Lys Glu Gl Lys Val Ly 26 Glu Met Il 2665	2555 Eu Leu Phe 570 Ly Val Ile 78 Glu Glu Sp Lys Phe 2620 Lu His Asn 2635 78 Asp Ser 550 Le Arg Glu	Phe Phe Ile Asp 2590 Ile Leu 2605 Asp Asn Met Trp Thr Glu Arg Asn 2670	2560 Met Val 2575 Thr Phe Lys Thr Lys Thr 415 Tyr 2640 Tyr Thr 2655 Leu Asp
Leu Phe Ala Ala Ile Ile Ile Val 258 Ala Asp Leu Arg 2595 Thr Cys Phe Ile 2610 Val Thr Phe Glu 2625 Leu Cys Phe Ile Gly Pro Glu Ser	2550 Arg Val Ile 2565 Leu Asn Leu 0 Ser Glu Lys Cys Gly Leu 261 Glu His Ile 2630 Val Leu Val 2645 Tyr Val Ala	Tyr Asp Le 25 Ile Phe Gl 2585 Gln Lys Ly 2600 Glu Arg As 5 Lys Glu Gl Lys Val Ly 26 Glu Met Il 2665	2555 Eu Leu Phe 570 Ly Val Ile 78 Glu Glu Sp Lys Phe 2620 Lu His Asn 2635 78 Asp Ser 550 Le Arg Glu	Phe Phe Ile Asp 2590 Ile Leu 2605 Asp Asn Met Trp Thr Glu Arg Asn 2670	2560 Met Val 2575 Thr Phe Lys Thr Lys Thr 415 Tyr 2640 Tyr Thr 2655 Leu Asp
Leu Phe Ala Ala Ile Ile Ile Val	2550 Arg Val Ile 2565 Leu Asn Leu 0 Ser Glu Lys Cys Gly Leu 261 Glu His Ile 2630 Val Leu Val 2645 Tyr Val Ala 0 Met Arg Ala Glu Leu Arg 269	Tyr Asp Le 25 Ile Phe Gl 2585 Gln Lys Ly 2600 Glu Arg As 5 Lys Glu Gl Lys Val Ly 26 Glu Met Il 2665 Met Ser Le 2680 Asn Leu Gl	2555 eu Leu Phe 570 ly Val Ile 78 Glu Glu sp Lys Phe 2620 lu His Asn 2635 78 Asp Ser 550 le Arg Glu eu Val Ser ln Glu Lys 2700	Phe Phe Ile Asp 2590 Ile Leu 2605 Asp Asn Met Trp Thr Glu Arg Asn 2670 Ser Asp 2685 Leu Glu	2560 Met Val 2575 Thr Phe Lys Thr Lys Thr 41s Tyr 2640 Tyr Thr 2655 Leu Asp Ser Glu Ser Thr
Leu Phe Ala Ala Ile Ile Ile Val	2550 Arg Val Ile 2565 Leu Asn Leu 0 Ser Glu Lys Cys Gly Leu 261 Glu His Ile 2630 Val Leu Val 2645 Tyr Val Ala 0 Met Arg Ala Glu Leu Arg 269 Thr Asn Leu 2710	Tyr Asp Le 25 Ile Phe Gl 2585 Gln Lys Ly 2600 Glu Arg As 5 Lys Glu Gl Lys Val Ly 26 Glu Met Il 2665 Met Ser Le 2680 Asn Leu Gl 5 Ser Gly Gl	2555 eu Leu Phe 570 ly Val Ile 78 Glu Glu sp Lys Phe 2620 lu His Asn 2635 78 Asp Ser 550 le Arg Glu eu Val Ser ln Glu Lys 2700 ln Leu Ser 2715	Phe Phe Ile Asp 2590 Ile Leu 2605 Asp Asn Met Trp Thr Glu Arg Asn 2670 Ser Asp 2685 Leu Glu Glu Leu	2560 Met Val 2575 Thr Phe Lys Thr Lys Thr 2640 Tyr Thr 2655 Leu Asp Ser Glu Ser Thr Lys Asp 2720
Leu Phe Ala Ala Ile Ile Ile Val 258 Ala Asp Leu Arg 2595 Thr Cys Phe Ile 2610 Val Thr Phe Glu 2625 Leu Cys Phe Ile Gly Pro Glu Ser 266 Trp Phe Pro Arg 2675 Gly Glu Gln Asn 2690 Met Lys Leu Val	2550 Arg Val Ile 2565 Leu Asn Leu 0 Ser Glu Lys Cys Gly Leu 261 Glu His Ile 2630 Val Leu Val 2645 Tyr Val Ala 0 Met Arg Ala Glu Leu Arg 269 Thr Asn Leu 2710 Gln Arg Lys 2725	Tyr Asp Le 25 Ile Phe Gl 2585 Gln Lys Ly 2600 Glu Arg As 5 Lys Glu Gl Lys Val Ly 2665 Met Ser Le 2680 Asn Leu Gl 5 Ser Gly Gl Gln Lys Gl Gln Lys Gl 27	2555 eu Leu Phe 570 ly Val Ile 75 Glu Glu Ep Lys Phe 2620 lu His Asn 2635 75 Asp Ser 550 le Arg Glu eu Val Ser ln Glu Lys 2700 ln Leu Ser 2715 ln Arg Ile	Phe Phe Ile Asp 2590 Ile Leu 2605 Asp Asn Met Trp Thr Glu Arg Asn 2670 Ser Asp 2685 Leu Glu Glu Leu Gly Leu	2560 Met Val 2575 Thr Phe Lys Thr Lys Thr 2640 Tyr Thr 2655 Leu Asp Ser Glu Ser Thr Lys Asp 2720

<210> 5 <211> 2710

<212> PRT

<213> Artificial Sequence

<220>

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25

Val	Pro	Val 435	Ser	Pro	Ala	Glu	Val 440	Arg	Asp	Leu	Asp	Phe	Ala	Asn	Asp
Ala	Ser 450		Val	Leu	Gly	Ser 455	Ile	Ala	Gly	Lys	Leu 460	Glu	Lys	Gly	Thr
Ile 465		Gln	Asn	Glu	Arg 470	Arg	Ser	Val	Thr	Lys 475	Leu	Leu	Glu	Asp	Leu 480
	Tyr	Phe	Val	Thr 485	Gly	Gly	Thr	Asn	Ser 490	Gly	Gln	Asp	Val	Leu 495	Glu
Val	Val	Phe	Ser 500	Lys	Pro	Asn	Arg	Glu 505	Arg	Gln	Lys	Leu	Met 510	Arg	Glu
		515					520					Ala 525			
Asp	Cys 530	Gly	Asp	Gly	Pro	Met 535	Leu	Arg	Leu	Glu	Glu 540	Leu	Gly	Asp	Gln
545					550					555		Tyr			560
				565					570			Tyr		575	
		_	580			_		585				Val	590		
_		595					600					Leu 605			
	610					615					620	Leu			
625	_				630					635		Leu			640
		_		645					650			Cys		655	
			660					665				Lys	670		
	_	675					680					Asn 685			
	690		_			695					700	Arg			
705					710					715		Gln Tyr	-		720
	_			725	_				730			Tyr		735	
			740					745				Leu	750		
		755					760					765			
	770					775					780	Phe			
785					790					795		Gln			800
	_	_		805					810			Glu		815	
			820					825				Ile	830		•
		835					840					Arg 845			
_	850					855					860	Lys			
865					870					875					Asn 880
		_		885	_				890			Ala		895	
Cys	Val	His	Val 900	Thr	Thr	Iie	Pne	Pro 905	Ile	Ser	Lys	Met	Thr 910	гуз	Gly

Glu Glu Asn Lys Gly Ser Asn Val Met Arg Ser Ile His Gly Val Gly 920 Glu Leu Met Thr Gln Val Val Leu Arg Gly Gly Gly Phe Leu Pro Met 935 940 Thr Pro Met Ala Ala Pro Glu Gly Asn Val Lys Gln Ala Glu Pro 955 950 Glu Lys Glu Asp Ile Met Val Met Asp Thr Lys Leu Lys Ile Ile Glu 970 965 Ile Leu Gln Phe Ile Leu Asn Val Arg Leu Asp Tyr Arg Ile Ser Cys 985 990 Leu Leu Cys Ile Phe Lys Arg Glu Phe Asp Glu Ser Asn Ser Gln Ser 1000 1005 Ser Glu Thr Ser Ser Gly Asn Ser Ser Gln Glu Gly Pro Ser Asn Val 1010 1015 1020 Pro Gly Ala Leu Asp Phe Glu His Ile Glu Glu Gln Ala Glu Gly Ile 1035 1025 1030 Phe Gly Gly Ser Glu Glu Asn Thr Pro Leu Asp Leu Asp Asp His Gly 1045 1050 1055 Gly Arg Thr Phe Leu Arg Val Leu Leu His Leu Thr Met His Asp Tyr 1060 1065 1070 Pro Pro Leu Val Ser Gly Ala Leu Gln Leu Leu Phe Arg His Phe Ser 1075 1080 1085 Gln Arg Gln Glu Val Leu Gln Ala Phe Lys Gln Val Gln Leu Leu Val 1090 1095 1100 Thr Ser Gln Asp Val Asp Asn Tyr Lys Gln Ile Lys Gln Asp Leu Asp 1105 1110 1115 1120 Gln Leu Arg Ser Ile Val Glu Lys Ser Glu Leu Trp Val Tyr Lys Gly 1125 1130 Gln Gly Pro Asp Glu Pro Met Asp Gly Ala Ser Gly Glu Asn Glu His 1140 1145 1150 Lys Lys Thr Glu Glu Gly Thr Ser Lys Pro Leu Lys His Glu Ser Thr 1155 1160 1165 Ser Ser Tyr Asn Tyr Arg Val Val Lys Glu Ile Leu Ile Arg Leu Ser 1170 1175 1180 Lys Leu Cys Val Gln Glu Ser Ala Ser Val Arg Lys Ser Arg Lys Gln 1185 1190 1195 Gln Gln Arg Leu Leu Arg Asn Met Gly Ala His Ala Val Val Leu Glu 1205 1210 1215 Leu Leu Gln Ile Pro Tyr Glu Lys Ala Glu Asp Thr Lys Met Gln Glu 1220 1225 1230 Ile Met Arg Leu Ala His Glu Phe Leu Gln Asn Phe Cys Ala Gly Asn 1235 1240 1245 Gln Gln Asn Gln Ala Leu Leu His Lys His Ile Asn Leu Phe Leu Asn 1250 1255 1260 Pro Gly Ile Leu Glu Ala Val Thr Met Gln His Ile Phe Met Asn Asn 1265 1270 1275 1280 Phe Gln Leu Cys Ser Glu Ile Asn Glu Arg Val Val Gln His Phe Val 1285 1290 His Cys Ile Glu Thr His Gly Arg Asn Val Gln Tyr Ile Lys Phe Leu 1300 1305 Gln Thr Ile Val Lys Ala Glu Gly Lys Phe Ile Lys Lys Cys Gln Asp 1315 1320 1325 Met Val Met Ala Glu Leu Val Asn Ser Gly Glu Asp Val Leu Val Phe 1335 1340 Tyr Asn Asp Arg Ala Ser Phe Gln Thr Leu Ile Gln Met Met Arg Ser 1345 1350 1355 Glu Arg Asp Arg Met Asp Glu Asn Ser Pro Leu Phe Met Tyr His Ile 1365 1370 1375 His Leu Val Glu Leu Leu Ala Val Cys Thr Glu Gly Lys Asn Val Tyr 1385

Thr Glu Ile Lys Cys Asn Ser Leu Leu Pro Leu Asp Asp Ile Val Arg 1395 1400 Val Val Thr His Glu Asp Cys Ile Pro Glu Val Lys Ile Ala Tyr Ile 1410 1415 1420 Asn Phe Leu Asn His Cys Tyr Val Asp Thr Glu Val Glu Met Lys Glu 1430 1435 Ile Tyr Thr Ser Asn His Met Trp Lys Leu Phe Glu Asn Phe Leu Val 1445 1450 1455 Asp Ile Cys Arg Ala Cys Asn Asn Thr Ser Asp Arg Lys His Ala Asp 1460 1465 Ser Val Leu Glu Lys Tyr Val Thr Glu Ile Val Met Ser Ile Val Thr 1480 Thr Phe Phe Ser Ser Pro Phe Ser Asp Gln Ser Thr Thr Leu Gln Thr 1500 1490 1495 Arg Gln Pro Val Phe Val Gln Leu Leu Gln Gly Val Phe Arg Val Tyr 1505 1510 1515 His Cys Asn Trp Leu Met Pro Ser Gln Lys Ala Ser Val Glu Ser Cys 1525 1530 Ile Arg Val Leu Ser Asp Val Ala Lys Ser Arg Ala Ile Ala Ile Pro 1540 1545 1550 Val Asp Leu Asp Ser Gln Val Asn Asn Leu Phe Leu Lys Ser His Asn 1555 1560 1565 Ile Val Gln Lys Thr Ala Met Asn Trp Arg Leu Ser Ala Arg Asn Ala 1580 1570 1575 Ala Arg Arg Asp Ser Val Leu Ala Ala Ser Arg Asp Tyr Arg Asn Ile 1590 1595 1600 Ile Glu Arg Leu Gln Asp Ile Val Ser Ala Leu Glu Asp Arg Leu Arg 1605 1610 1615 Pro Leu Val Gln Ala Glu Leu Ser Val Leu Val Asp Val Leu His Arg 1620 1625 1630 Pro Glu Leu Leu Phe Pro Glu Asn Thr Asp Ala Arg Arg Lys Cys Glu 1635 1640 1645 Ser Gly Gly Phe Ile Cys Lys Leu Ile Lys His Thr Lys Gln Leu Leu 1655 1660 Glu Glu Asn Glu Glu Lys Leu Cys Ile Lys Val Leu Gln Thr Leu Arg 1670 1675 Glu Met Met Thr Lys Asp Arg Gly Tyr Gly Glu Lys Gly Glu Ala Leu 1690 1695 1685 Arg Gln Ile Leu Val Asn Arg Tyr Tyr Gly Asn Ile Arg Pro Ser Gly 1700 1705 1710 Arg Arg Glu Glu Leu Thr Ser Phe Gly Asn Gly Pro Leu Ser Pro Gly 1715 1720 1725 Gly Pro Ser Lys Pro Gly Gly Gly Gly Gly Pro Gly Ser Gly Ser 1740 1730 1735 Thr Ser Arg Gly Glu Met Ser Leu Ala Glu Val Gln Cys His Leu Asp 1745 1750 1755 Lys Glu Gly Ala Ser Asn Leu Val Ile Asp Leu Ile Met Asn Ala Ser 1765 1770 1775 Ser Asp Arg Val Phe His Glu Ser Ile Leu Leu Ala Ile Ala Leu Leu 1780 1785 1790 Glu Gly Gly Asn Thr Thr Ile Gln His Ser Phe Phe Cys Arg Leu Thr 1800 1805 Glu Asp Lys Lys Ser Glu Lys Phe Phe Lys Val Phe Tyr Asp Arg Met 1815 Lys Val Ala Gln Gln Glu Ile Lys Ala Thr Val Thr Val Asn Thr Ser 1830 1835 Asp Leu Gly Asn Lys Lys Asp Asp Glu Val Asp Arg Asp Ala Pro 1845 1850 1855 Ser Arg Lys Lys Ala Lys Glu Pro Thr Thr Gln Ile Thr Glu Glu Val 1860 1865

Arg Asp Gln Leu Leu Glu Ala Ser Ala Ala Thr Arg Lys Ala Phe Thr 1880 Thr Phe Arg Arg Glu Ala Asp Pro Asp Asp His Tyr Gln Ser Gly Glu 1895 1900 Gly Thr Gln Ala Thr Thr Asp Lys Ala Lys Asp Asp Leu Glu Met Ser 1915 1910 Ala Val Ile Thr Ile Met Gln Pro Ile Leu Arg Phe Leu Gln Leu Leu 1925 1930 Cys Glu Asn His Asn Arg Asp Leu Gln Asn Phe Leu Arg Cys Gln Asn 1940 1945 1950 Asn Lys Thr Asn Tyr Asn Leu Val Cys Glu Thr Leu Gln Phe Leu Asp 1955 1960 1965 Cys Ile Cys Gly Ser Thr Thr Gly Gly Leu Gly Leu Gly Leu Tyr 1970 1975 1980 Ile Asn Glu Lys Asn Val Ala Leu Ile Asn Gln Thr Leu Glu Ser Leu 1990 1995 Thr Glu Tyr Cys Gln Gly Pro Cys His Glu Asn Gln Asn Cys Ile Ala 2005 2010 2015 Thr His Glu Ser Asn Gly Ile Asp Ile Ile Thr Ala Leu Ile Leu Asn 2020 2025 Asp Ile Asn Pro Leu Gly Lys Lys Arg Met Asp Leu Val Leu Glu Leu 2035 2040 2045 Lys Asn Asn Ala Ser Lys Leu Leu Leu Ala Ile Met Glu Ser Arg His 2050 2055 2060 Asp Ser Glu Asn Ala Glu Arg Ile Leu Tyr Asn Met Arg Pro Lys Glu 2070 2075 Leu Val Glu Val Ile Lys Lys Ala Tyr Met Gln Gly Glu Val Glu Phe 2085 2090 Glu Asp Gly Glu Asn Gly Glu Asp Gly Ala Ala Ser Pro Arg Asn Val 2100 2105 2110 Gly His Asn Ile Tyr Ile Leu Ala His Gln Leu Ala Arg His Asn Lys 2115 2120 2125 Glu Leu Gln Thr Met Leu Lys Pro Gly Gly Gln Val Asp Gly Asp Glu 2130 2135 2140 Ala Leu Glu Phe Tyr Ala Lys His Thr Ala Gln Ile Glu Ile Val Arg 2155 2150 Leu Asp Arg Thr Met Glu Gln Ile Val Phe Pro Val Pro Ser Ile Cys 2165 2170 Glu Phe Leu Thr Lys Glu Ser Lys Leu Arq Ile Tyr Tyr Thr Thr Glu 2180 2185 2190 Arg Asp Glu Gln Gly Ser Lys Ile Asn Asp Phe Phe Leu Arg Ser Glu 2195 2200 2205 Asp Leu Phe Asn Glu Met Asn Trp Gln Lys Lys Leu Arg Ala Gln Pro 2210 2215 2220 Val Leu Tyr Trp Cys Ala Arg Asn Met Ser Phe Trp Ser Ser Ile Ser 2225 2230 2235 2240 Phe Asn Leu Ala Val Leu Met Asn Leu Leu Val Ala Phe Phe Tyr Pro 2245 2250 2255 Phe Lys Gly Val Arg Gly Gly Thr Leu Glu Pro His Trp Ser Gly Leu 2260 2265 2270 Leu Trp Thr Ala Met Leu Ile Ser Leu Ala Ile Val Ile Ala Leu Pro 2275 2280 2285 Lys Pro His Gly Ile Arg Ala Leu Ile Ala Ser Thr Ile Leu Arg Leu 2290 2295 2300 Ile Phe Ser Val Gly Leu Gln Pro Thr Leu Phe Leu Leu Gly Ala Phe 2305 2310 2315 Asn Val Cys Asn Lys Ile Ile Phe Leu Met Ser Phe Val Gly Asn Cys 2325 2330 2335 Gly Thr Phe Thr Arg Gly Tyr Arg Ala Met Val Leu Asp Val Glu Phe 2345

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His Glu Phe Phe Tyr Ser Leu Leu Leu Phe Asp Leu Val Tyr Arg Glu
        2375 2380
Glu Thr Leu Leu Asn Val Ile Lys Ser Val Thr Arg Asn Gly Arg Pro
                     2395
              2390
Ile Ile Leu Thr Ala Ala Leu Ala Leu Ile Leu Val Tyr Leu Phe Ser
           2405
                 2410
Ile Val Gly Tyr Leu Phe Phe Lys Asp Asp Phe Ile Leu Glu Val Asp
        2420
              2425 2430
Arg Leu Pro Asn Glu Thr Ala Gly Pro Glu Thr Gly Glu Ser Leu Ala
 2435 2440 2445
Asn Asp Phe Leu Tyr Ser Asp Val Cys Arg Val Glu Thr Gly Glu Asn
         2455
                        2460
Cys Thr Ser Pro Ala Pro Lys Glu Glu Leu Leu Pro Val Glu Glu Thr
     2470 2475
Glu Gln Asp Lys Glu His Thr Cys Glu Thr Leu Leu Met Cys Ile Val
         2485 2490 2495
Thr Val Leu Ser His Gly Leu Arg Ser Gly Gly Val Gly Asp Val
        2500
                       2505
Leu Arg Lys Pro Ser Lys Glu Glu Pro Leu Phe Ala Ala Arg Val Ile
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Tyr Asp Leu Leu Phe Phe Met Val Ile Ile Val Leu Asn Leu
  2530 2535
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Gln Lys Lys Glu Glu Ile Leu Lys Thr Thr Cys Phe Ile Cys Gly Leu
           2565 2570 2575
Glu Arg Asp Lys Phe Asp Asn Lys Thr Val Thr Phe Glu Glu His Ile
                       2585 2590
        2580
Lys Glu Glu His Asn Met Trp His Tyr Leu Cys Phe Ile Val Leu Val
                    2600 2605
   2595
Lys Val Lys Asp Ser Thr Glu Tyr Thr Gly Pro Glu Ser Tyr Val Ala
   2610 2615 2620
Glu Met Ile Arg Glu Arg Asn Leu Asp Trp Phe Pro Arg Met Arg Ala
2625 2630 2635
Met Ser Leu Val Ser Ser Asp Ser Glu Gly Glu Gln Asn Glu Leu Arg
           2645
                          2650 2655
Asn Leu Gln Glu Lys Leu Glu Ser Thr Met Lys Leu Val Thr Asn Leu
    2660 2665 2670
Ser Gly Gln Leu Ser Glu Leu Lys Asp Gln Met Thr Glu Gln Arg Lys
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Val	Val	Phe		Lys	Pro	Asn	Arg		Arg	Gln	Lys	Leu	Met 510	Arg	Glu
Gln	Asn		500 Leu	Lys	Gln	Ile		505 Lys	Leu	Leu	Gln			Phe	Thr
Asp		515 Gly	Asp	Gly	Pro		520 Leu	Arg	Leu	Glu	Glu 540	525 Leu	Gly	Asp	Gln
_	530 His	Ala	Pro	Phe		535 His	Ile	Cys	Arg			Tyr	Arg	Val	Leu 560
545 Arg	His	Ser	Gln		550 Asp	Tyr	Arg	Lys	Asn 570	555 Gln	Glu	Tyr	Ile	Ala 575	
Gln	Phe	Gly	Phe 580	565 Met	Gln	Lys	Gln	Ile 585		Tyr	Asp	Val	Leu 590	Ala	Glu
Asp	Thr	Ile 595		Ala	Leu	Leu	His 600		Asn	Arg	Lys	Leu 605		Glu	Lys
His	Ile 610		Ala	Ala	Glu	Ile 615		Thr	Phe	Val	Ser 620	Leu	Val	Arg	Lys
Asn 625	Arg	Glu	Pro	Arg	Phe 630	Leu	Asp	Tyr	Leu	Ser 635	Asp	Leu	Cys	Val	Ser 640
		_		645					650					Ala 655	
			660			_		665					670	Val	
	_	675					680		•			685		Leu	
	690		_			695		_			700			Ser	
705			_		710					715				Ala	720
	-		-	725	_	_	_		730					Tyr 735	
			740					745					750	Ala	
		755		_			760					765		Сув	
	770					775					780			Arg	
785					790					795				Thr	800
				805					810					Ala 815	
_			820					825					830	Glu	
		835					840					845			Val
	850					855					860				Phe
865					870					875					Asn 880
				885					890					Leu 895	
			900					905					910		Gly
		915	Ā				920					925			Gly
	930					935					940				Met
Thr 945	Pro	Met	Ala	Ala		Pro	Glu	Gly	Asn		Lys	Gln	Ala	Glu	Pro
					950					955				Ile	960

Ile Leu Gln Phe		Val Arg 985	Leu Asp Tyr	Arg Ile Ser	Cys
Leu Leu Cys Ile 995	Phe Lys Arg	Glu Phe 1000	Asp Glu Ser	Asn Ser Gln 1005	Ser
Ser Glu Thr Ser 1010	Ser Gly Asn 101		Gln Glu Gly 1020		Val
Pro Gly Ala Leu 1025	a Asp Phe Glu 1030	His Ile	Glu Glu Gln 1035		Ile 1040
Phe Gly Gly Sen	Glu Glu Asn 1045		Leu Asp Leu 1050	Asp Asp His	
Gly Arg Thr Phe		Leu Leu 1065		Met His Asp 1070	Tyr
Pro Pro Leu Val	Ser Gly Ala	Leu Gln 1080	Leu Leu Phe	Arg His Phe 1085	Ser
Gln Arg Gln Glu 1090	ı Val Leu Gln 109		Lys Gln Val 110		Val
Thr Ser Gln Asp	o Val Asp Asn 1110	Tyr Lys	Gln Ile Lys 1115		Asp 1120
Gln Leu Arg Se	1125		1130	1135	
Gln Gly Pro Asp		Asp Gly 1145		Glu Asn Glu 1150	His
Lys Lys Thr Glu 1155	ı Glu Gly Thr	Ser Lys 1160	Pro Leu Lys	His Glu Ser 1165	Thr
Ser Ser Tyr Ası 1170	n Tyr Arg Val 117		Glu Ile Leu 118		Ser
Lys Leu Cys Val	l Gln Glu Ser 1190	Ala Ser	Val Arg Lys 1195		Gln 1200
Gln Gln Arg Let	1205	_	1210	1215	
Leu Leu Gln Ile 123		Lys Ala 1225		Lys Met Gln 1230	Glu
Ile Met Arg Let 1235		1240		1245	
Gln Gln Asn Gli 1250	125	5	126	0	
Pro Gly Ile Let 1265	1270		1275		1280
Phe Gln Leu Cys	s Ser Glu Ile 1285		Arg Val Val 1290	Gln His Phe 1295	
His Cys Ile Gl	ı Thr His Gly 00				Leu
Gln Thr Ile Vai	_	1320	_	1325	
Met Val Met Ala 1330	a Glu Leu Val 133		Gly Glu Asp 134		Phe
Tyr Asn Asp Arg	1350		1355		1360
Glu Arg Asp Arg	1365		1370	1375	
His Leu Val Glu	30	1385	•	1390	
Thr Glu Ile Ly: 1395	s Cys Asn Ser	Leu Leu 1400	Pro Leu Asp	Asp Ile Val 1405	Arg
Val Val Thr His 1410	141	.5	142	0	
Asn Phe Leu Asi 1425	1430		1435		1440
Ile Tyr Thr Se	r Asn His Met 1445	Trp Lys	Leu Phe Glu 1450	Asn Phe Leu 1455	

Asp								_							_
	Ile	Cys	Arg 1460		Cys	Asn	Asn	Thr 1465		Asp	Arg	Lys	His 1470		Asp
Ser	Val	Leu 1475		Lys	Tyr	Val	Thr 1480	Glu	Ile	Val	Met	Ser 1485		Val	Thr
	-1			~		D1			a 1	0	mb			01 -	mb ~
Thr			ser	ser	Pro			Asp	GII	ser			ьeu	GIN	IIIL
	1490					1495					1500				_
Arg	Gln	Pro	Val	Phe	Val	Gln	Leu	Leu	Gln			Phe	Arg	Val	
1505					1510					1515					1520
His	Cys	Asn	Trp	Leu	Met	Pro	Ser	Gln	Lys	Ala	Ser	Val	Glu	Ser	Cys
				1525	5				1530)				1535	5
Ile	Arq	Val	Leu	Ser	Asp	Val	Ala	Lys	Ser	Arg	Ala	Ile	Ala	Ile	Pro
	J		1540		~			1545		_			1550		
Val	asp	Leu	Asp	Ser	Gln	Val	Asn	Asn	Leu	Phe	Leu	Lvs	Ser	His	Asn
		1555	_				1560					1565			
Tle	Val			Thr	Δla	Met		Trp	Ara	Len	Ser	Ala	Ara	Asn	Άla
	1570		_,_			1575			5		1580		5		
Λla			Acn	Ser	Tall			Ala	Ser	Δra			Δra	Δsn	Tle
		Arg	App	SCI	1590		AIU	ALG	JCI	1595		- 7 -	nr 9	11011	1600
1585		7	T 011	C1 =			170 T	Ser	777			7 an	7~~	T.O.I.	
TIE	GIU	Arg	ьец		_	TIE	vaı	Ser	1610		GIU	Asp	Arg	1615	
D	T	**- 7	a 1	1605		T		77- T			7. ~ ~	7707	T 0		
Pro	Leu	vaı			GIU	ьeu	ser	Val		vaı	Asp	vai			Arg
_	~ 7	_	1620		_	~ 3		1625			3	3	1630		G 2
Pro	GIu			Pne	Pro	GIU		Thr	Asp	Ата	Arg			Cys	GIU
	_	1635		_			1640					1645		_	_
Ser	_		Phe	Ile	Cys			Ile	Lys	His			GIn	Leu	Leu
	1650					1655					1660				
Glu	Glu	Asn	Glu	Glu	_		Cys	Ile	Lys			Gln	Thr	Leu	_
1665					1670					1675					1680
Glu	Met	Met	Thr	Lys	Asp	Arg	Gly	Tyr	Gly	Glu	Lys	Gln	Ile	Ser	Ile
				1685					1690					1695	
Asp	Glu	Leu	Glu	Asn	Ala	Glu	Leu	Pro	Gln	Pro	Pro	Glu	Ala	Glu	Asn
			1700)				1705	5				1710)	
Ser	Thr	Glu			Glu	Pro	Ser	1705 Pro		Leu	Arg	Gln			Asp
		1715	Glu 5	Leu			1720	Pro	Pro			1725	Leu	Glu	
		1715	Glu 5	Leu			1720	Pro	Pro			1725	Leu	Glu	
		1719 Arg	Glu 5	Leu			1720 Arg	Pro	Pro			1725 Asn	Leu	Glu	
His	Lys 1730	1715 Arg)	Glu Gly	Leu Glu	Ala	Leu 1735	1720 Arg	Pro) Gln	Pro Ile	Leu	Val 1740	1725 Asn)	Leu Arg	Glu Tyr	Tyr
His	Lys 1730 Asn	1715 Arg)	Glu Gly	Leu Glu	Ala	Leu 1739 Gly	1720 Arg	Pro	Pro Ile	Leu	Val 1740 Leu	1725 Asn)	Leu Arg	Glu Tyr	Tyr
His Gly 1745	Lys 1730 Asn	1719 Arg) Ile	Glu Gly Arg	Leu Glu Pro	Ala Ser 1750	Leu 1735 Gly	1720 Arg 5 Arg	Pro) Gln Arg	Pro Ile Glu	Leu Glu 175!	Val 1740 Leu	1725 Asn) Thr	Leu Arg Ser	Glu Tyr Phe	Tyr Gly 1760
His Gly 1745	Lys 1730 Asn	1719 Arg) Ile	Glu Gly Arg	Leu Glu Pro	Ala Ser 1750 Pro	Leu 1735 Gly	1720 Arg 5 Arg	Pro) Gln	Pro Ile Glu	Leu Glu 1759 Lys	Val 1740 Leu	1725 Asn) Thr	Leu Arg Ser	Glu Tyr Phe	Tyr Gly 1760 Gly
His Gly 1745 Asn	Lys 1730 Asn Gly	1715 Arg) Ile Pro	Glu Gly Arg Leu	Leu Glu Pro Ser 1769	Ala Ser 1750 Pro	Leu 1735 Gly) Gly	1720 Arg Arg Arg	Pro Gln Arg Pro	Pro Ile Glu Ser	Leu Glu 175! Lys	Val 1740 Leu Pro	1725 Asn Thr	Leu Arg Ser Gly	Glu Tyr Phe Gly 1775	Tyr Gly 1760 Gly
His Gly 1745 Asn	Lys 1730 Asn Gly	1719 Arg) Ile Pro	Glu Gly Arg Leu Gly	Leu Glu Pro Ser 1765 Ser	Ala Ser 1750 Pro Gly	Leu 1739 Gly Gly Ser	1720 Arg Arg Gly	Pro) Gln Arg	Pro Ile Glu Ser 1770 Arg	Leu Glu 175! Lys O Gly	Val 1740 Leu Pro Glu	1725 Asn Thr Gly	Leu Arg Ser Gly Ser	Glu Tyr Phe Gly 1775 Leu	Tyr Gly 1760 Gly
His Gly 1745 Asn Gly	Lys 1730 Asn Gly	1719 Arg) Ile Pro	Glu Gly Arg Leu Gly	Leu Glu Pro Ser 1765 Ser	Ala Ser 1750 Pro Gly	Leu 1735 Gly) Gly Ser	Arg Arg Gly Thr	Pro Gln Arg Pro Ser 1785	Pro Ile Glu Ser 1770 Arg	Leu Glu 175! Lys O Gly	Val 1740 Leu Pro Glu	1725 Asn Thr Gly	Leu Arg Ser Gly Ser 1790	Glu Tyr Phe Gly 1775 Leu	Tyr Gly 1760 Gly S
His Gly 1745 Asn Gly	Lys 1730 Asn Gly	Arg Ile Pro Pro Gln	Glu Gly Arg Leu Gly 1780 Cys	Leu Glu Pro Ser 1765 Ser	Ala Ser 1750 Pro Gly	Leu 1735 Gly) Gly Ser	Arg Arg Gly Thr	Pro Olim Olim Olim Olim Olim Olim Olim Olim	Pro Ile Glu Ser 1770 Arg	Leu Glu 175! Lys O Gly	Val 1740 Leu Pro Glu	Asn Thr Gly Met	Leu Arg Ser Gly Ser 1790 Leu	Glu Tyr Phe Gly 1775 Leu	Tyr Gly 1760 Gly S
His Gly 1745 Asn Gly Glu	Lys 1730 Asn Gly Gly Val	Arg) Ile Pro Pro Gln 1799	Glu Gly Arg Leu Gly 1780	Leu Glu Pro Ser 1765 Ser His	Ala Ser 1750 Pro Gly Leu	Leu 1735 Gly Gly Ser	Arg Arg Gly Thr	Pro Gln Arg Pro Ser 1785 Glu	Pro Ile Glu Ser 1770 Arg Gly	Leu Glu 175! Lys) Gly Ala	Val 1740 Leu Pro Glu Ser	Asn Officery Asn Asn Asn 1805	Leu Arg Ser Gly Ser 1790 Leu	Glu Tyr Phe Gly 1775 Leu Val	Tyr Gly 1760 Gly Ala Ile
His Gly 1745 Asn Gly Glu	Lys 1730 Asn Gly Gly Val	I715 Arg Ile Pro Pro Gln 1795 Ile	Glu Gly Arg Leu Gly 1780	Leu Glu Pro Ser 1765 Ser His	Ala Ser 1750 Pro Gly Leu	Leu 1735 Gly Gly Ser Asp	Arg Arg Gly Thr Lys 1800 Ser	Pro Olim Olim Olim Olim Olim Olim Olim Olim	Pro Ile Glu Ser 1770 Arg Gly	Leu Glu 175! Lys) Gly Ala	Val 1740 Leu Pro Glu Ser	1725 Asn Thr Gly Met Asn 1805 His	Leu Arg Ser Gly Ser 1790 Leu	Glu Tyr Phe Gly 1775 Leu Val	Tyr Gly 1760 Gly Ala Ile
His Gly 1745 Asn Gly Glu Asp	Lys 1730 Asn Gly Gly Val Leu 1810	1715 Arg Ile Pro Pro Gln 1795 Ile	Glu Gly Arg Leu Gly 1780 Cys Met	Leu Glu Pro Ser 1765 Ser His	Ala Ser 1750 Pro Gly Leu	Leu 1735 Gly Gly Ser Asp Ser 1815	Arg Arg Gly Thr Lys 1800 Ser	Pro Olim Arg Pro Ser 1785 Glu Asp	Pro Ile Glu Ser 1770 Arg Gly Arg	Leu Glu 175! Lys Gly Ala Val	Val 1740 Leu Pro Glu Ser Phe 1820	1725 Asn Thr Gly Met Asn 1805 His	Leu Arg Ser Gly Ser 1790 Leu Glu	Tyr Phe Gly 1775 Leu Val	Tyr Gly 1760 Gly Ala Ile Ile
His Gly 1745 Asn Gly Glu Asp	Lys 1730 Asn Gly Gly Val Leu 1810	1715 Arg Ile Pro Pro Gln 1795 Ile	Glu Gly Arg Leu Gly 1780 Cys Met	Leu Glu Pro Ser 1765 Ser His	Ser 1750 Pro Gly Leu Ala Leu	Leu 1735 Gly Gly Ser Asp Ser 1815 Leu	Arg Arg Gly Thr Lys 1800 Ser	Pro Gln Arg Pro Ser 1785 Glu	Pro Ile Glu Ser 1770 Arg Gly Arg	Leu Glu 1759 Lys Gly Ala Val	Val 1740 Leu Pro Glu Ser Phe 1820 Thr	1725 Asn Thr Gly Met Asn 1805 His	Leu Arg Ser Gly Ser 1790 Leu Glu	Tyr Phe Gly 1775 Leu Val	Tyr Gly 1760 Gly Ala Ile Ile
His Gly 1745 Asn Gly Glu Asp Leu 1825	Lys 1730 Asn Gly Gly Val Leu 1810 Leu	1719 Arg Ile Pro Pro Gln 1799 Ile Ala	Glu Gly Arg Leu Gly 1780 Cys Met	Leu Glu Pro Ser 1765 Ser His Asn	Ala Ser 1750 Pro Gly Leu Ala Leu 1830	Leu 1735 Gly Gly Ser Asp Ser 1815 Leu	Arg Gly Thr Lys 1800 ser Glu	Pro Gln Arg Pro Ser 1785 Glu Asp Gly	Pro Ile Glu Ser 1770 Arg Gly Arg Gly	Leu Glu 1759 Lys Gly Ala Val Asn 1839	Val 1740 Leu Pro Glu Ser Phe 1820 Thr	1725 Asn Thr Gly Met Asn 1805 His	Leu Arg Ser Gly Ser 1790 Leu Glu Ile	Tyr Phe Gly 1775 Leu Val Ser	Tyr Gly 1760 Gly Ala Ile Ile His 1840
His Gly 1745 Asn Gly Glu Asp Leu 1825	Lys 1730 Asn Gly Gly Val Leu 1810 Leu	1719 Arg Ile Pro Pro Gln 1799 Ile Ala	Glu Gly Arg Leu Gly 1780 Cys Met	Leu Glu Pro Ser 1765 Ser His Asn Ala	Ser 1750 Pro Gly Leu Ala Leu 1830 Leu	Leu 1735 Gly Gly Ser Asp Ser 1815 Leu	Arg Gly Thr Lys 1800 ser Glu	Pro Olim Arg Pro Ser 1785 Glu Asp	Pro Ile Glu Ser 1770 Arg Gly Arg Gly Lys	Glu 175! Lys Gly Ala Val Asn 183! Lys	Val 1740 Leu Pro Glu Ser Phe 1820 Thr	1725 Asn Thr Gly Met Asn 1805 His	Leu Arg Ser Gly Ser 1790 Leu Glu Ile	Glu Tyr Phe Gly 1775 Leu Val Ser Gln Phe	Tyr Gly 1760 Gly Ala Ile Ile His 1840 Phe
His Gly 1745 Asn Gly Glu Asp Leu 1825 Ser	Lys 1730 Asn Gly Gly Val Leu 1810 Leu Phe	1719 Arg Ile Pro Pro Gln 1799 Ile Ala Phe	Glu Gly Arg Leu Gly 1780 Cys Met Ile	Leu Glu Pro Ser 1765 Ser His Asn Ala Arg 1845	Ser 1750 Pro Gly Leu Ala Leu 1830 Leu	Leu 1735 Gly Gly Ser Asp Ser 1815 Leu	Arg Gly Thr Lys 1800 Ser Glu Glu	Pro Gln Arg Pro Ser 1785 Glu Asp Gly Asp	Pro Ile Glu Ser 1770 Arg Gly Arg Gly Lys 1850	Leu Glu 1755 Lys Gly Ala Val Asn 1835 Lys	Val 1740 Leu Pro Glu Ser Phe 1820 Thr	Asn Gly Met Asn 1805 His Clu	Leu Arg Ser Gly Ser 1790 Leu Glu Ile Lys	Glu Tyr Phe Gly 1775 Leu Val Ser Gln Phe 1855	Tyr Gly 1760 Gly Ala Ile Ile His 1840 Phe
His Gly 1745 Asn Gly Glu Asp Leu 1825 Ser	Lys 1730 Asn Gly Gly Val Leu 1810 Leu Phe	1719 Arg Ile Pro Pro Gln 1799 Ile Ala Phe	Glu Gly Arg Leu Gly 1780 Cys Met Ile Cys	Leu Glu Pro Ser 1765 Ser His Asn Ala Arg 1845 Asp	Ser 1750 Pro Gly Leu Ala Leu 1830 Leu	Leu 1735 Gly Gly Ser Asp Ser 1815 Leu	Arg Gly Thr Lys 1800 Ser Glu Glu	Pro Gln Arg Pro Ser 1785 Glu Asp Gly Asp Val	Pro Ile Glu Ser 1770 Arg Gly Arg Gly Lys 1850 Ala	Leu Glu 1755 Lys Gly Ala Val Asn 1835 Lys	Val 1740 Leu Pro Glu Ser Phe 1820 Thr	Asn Gly Met Asn 1805 His Clu	Leu Arg Ser Gly Ser 1790 Leu Glu Ile Lys Ile	Glu Tyr Phe Gly 1775 Leu Val Ser Gln Phe 1855 Lys	Tyr Gly 1760 Gly Ala Ile Ile His 1840 Phe
His Gly 1745 Asn Gly Glu Asp Leu 1825 Ser Lys	Lys 1730 Asn Gly Gly Val Leu 1810 Leu Dhe	1715 Arg Ile Pro Pro Gln 1795 Ile Ala Phe	Glu Gly Arg Leu Gly 1780 Cys Met Ile Cys Tyr	Leu Glu Pro Ser 1765 Ser His Asn Ala Arg 1845 Asp	Ser 1750 Pro Gly Leu Ala Leu 1830 Leu Arg	Leu 1739 Gly Ser Asp Ser 1819 Leu Thr	Arg Gly Thr Lys 1800 Ser Glu Glu Lys	Pro Gln Arg Pro Ser 1785 Glu Asp Gly Asp Val 1865	Pro Ile Glu Ser 1770 Arg Gly Arg Gly Lys 1850 Ala	Glu 175! Lys Gly Ala Val Asn 183! Lys Gln	Val 1740 Leu Pro Glu Ser Phe 1820 Thr Ser	Asn Thr Gly Met Asn 1805 His Thr Glu Glu	Leu Arg Ser Gly Ser 1790 Leu Glu Ile Lys Ile 1870	Glu Tyr Phe Gly 1775 Leu Val Ser Gln Phe 1855 Lys	Gly 1760 Gly Ala Ile His 1840 Phe Ala
His Gly 1745 Asn Gly Glu Asp Leu 1825 Ser Lys	Lys 1730 Asn Gly Gly Val Leu 1810 Leu Dhe	1715 Arg Ile Pro Pro Gln 1795 Ile Ala Phe Phe	Glu Gly Arg Leu Gly 1780 Cys Met Ile Cys Tyr 1860 Val	Leu Glu Pro Ser 1765 Ser His Asn Ala Arg 1845 Asp	Ser 1750 Pro Gly Leu Ala Leu 1830 Leu Arg	Leu 1739 Gly Ser Asp Ser 1819 Leu Thr	Arg Gly Thr Lys 1800 Ser Glu Glu Lys Asp	Pro Gln Arg Pro Ser 1785 Glu Asp Gly Asp Val 1865 Leu	Pro Ile Glu Ser 1770 Arg Gly Arg Gly Lys 1850 Ala	Glu 175! Lys Gly Ala Val Asn 183! Lys Gln	Val 1740 Leu Pro Glu Ser Phe 1820 Thr Ser	Asn Thr Gly Met Asn 1805 His Thr Glu Glu Lys	Leu Arg Ser Gly Ser 1790 Leu Glu Ile Lys Ile 1870 Lys	Glu Tyr Phe Gly 1775 Leu Val Ser Gln Phe 1855 Lys	Gly 1760 Gly Ala Ile His 1840 Phe Ala
His Gly 1745 Asn Gly Glu Asp Leu 1825 Ser Lys	Lys 1730 Asn Gly Gly Val Leu 1810 Leu Wal	1715 Arg Ile Pro Pro Gln 1795 Ile Ala Phe Thr 1875	Glu Gly Arg Leu Gly 1780 Cys Met Ile Cys Tyr 1860 Val	Leu Glu Pro Ser 1765 Ser His Asn Ala Arg 1845 Asp	Ser 1750 Pro Gly Leu Ala Leu 1830 Leu Thr	Leu 1739 Gly Ser Asp Ser 1819 Leu Thr	Arg Gly Thr Lys 1800 Ser Glu Glu Lys Asp 1886	Pro Gln Arg Pro Ser 1785 Glu Asp Gly Asp Val 1865 Leu	Pro Ile Glu Ser 1770 Arg Gly Arg Gly Lys 1850 Ala Gly	Glu 175! Lys Gly Ala Val Asn 183! Lys Gln Asn	Val 1740 Leu Pro Glu Ser Phe 1820 Thr Ser Gln Lys	Asn Thr Gly Met Asn 1805 His Thr Glu Glu Lys 1885	Leu Arg Ser Gly Ser 1790 Leu Glu Ile Lys Ile 1870 Lys	Glu Tyr Phe Gly 1775 Leu Val Ser Gln Phe 1855 Lys Asp	Gly 1760 Gly Ala Ile Ile His 1840 Phe Ala Asp
His Gly 1745 Asn Gly Glu Asp Leu 1825 Ser Lys	Lys 1730 Asn Gly Gly Val Leu 1810 Leu Val Val	1715 Arg Ile Pro Pro Gln 1795 Ile Ala Phe Thr 1875 Asp	Glu Gly Arg Leu Gly 1780 Cys Met Ile Cys Tyr 1860 Val	Leu Glu Pro Ser 1765 Ser His Asn Ala Arg 1845 Asp	Ser 1750 Pro Gly Leu Ala Leu 1830 Leu Thr	Leu 1739 Gly Gly Ser Asp Ser 1819 Leu Thr Met Ser	Arg Gly Thr Lys 1800 Ser Glu Glu Lys Asp 1880 Ser	Pro Gln Arg Pro Ser 1785 Glu Asp Gly Asp Val 1865 Leu	Pro Ile Glu Ser 1770 Arg Gly Arg Gly Lys 1850 Ala Gly	Glu 175! Lys Gly Ala Val Asn 183! Lys Gln Asn	Val 1740 Leu Pro Glu Ser Phe 1820 Thr Ser Gln Lys	Asn Thr Gly Met Asn 1805 His Thr Glu Glu Lys 1885 Lys	Leu Arg Ser Gly Ser 1790 Leu Glu Ile Lys Ile 1870 Lys	Glu Tyr Phe Gly 1775 Leu Val Ser Gln Phe 1855 Lys Asp	Gly 1760 Gly Ala Ile Ile His 1840 Phe Ala Asp
His Gly 1745 Asn Gly Glu Asp Leu 1825 Ser Lys Thr	Lys 1730 Asn Gly Gly Val Leu 1810 Leu Val Val	I715 Arg Ile Pro Pro Gln 1795 Ile Ala Phe Thr 1875 Asp	Glu Gly Arg Leu Gly 1780 Cys Met Ile Cys Tyr 1860 Val	Leu Glu Pro Ser 1765 Ser His Asn Ala Arg 1845 Asp Asp	Ser 1750 Pro Gly Leu Ala Leu 1830 Leu Thr	Leu 1739 Gly Gly Ser Asp Ser 1819 Leu Thr Met Ser Pro 1899	Arg Arg Gly Thr Lys 1800 Ser Glu Glu Lys Asp 1880 Ser	Pro Gln Arg Pro Ser 1785 Glu Asp Gly Asp Val 1865 Leu Arg	Pro Ile Glu Ser 1770 Arg Gly Arg Gly Lys 1850 Ala Gly Lys	Leu Glu 175! Lys Gly Ala Val Asn 183! Lys Gln Asn Lys	Val 1740 Leu Pro Glu Ser Phe 1820 Thr Ser Gln Lys	Asn Thr Gly Met Asn 1805 His Thr Glu Glu Lys 1885 Lys	Leu Arg Ser Gly Ser 1790 Leu Glu Ile Lys Ile 1870 Lys Glu	Glu Tyr Phe Gly 1775 Leu Val Ser Gln Phe 1855 Lys Asp	Tyr Gly 1760 Gly Ala Ile His 1840 Phe Ala Asp
His Gly 1745 Asn Gly Glu Asp Leu 1825 Ser Lys Thr Glu Thr	Lys 1730 Asn Gly Gly Val Leu 5 Phe Val Val Val 1890 Gln	I715 Arg Ile Pro Pro Gln 1795 Ile Ala Phe Thr 1875 Asp	Glu Gly Arg Leu Gly 1780 Cys Met Ile Cys Tyr 1860 Val	Leu Glu Pro Ser 1765 Ser His Asn Ala Arg 1845 Asp Asp	Ser 1750 Pro Gly Leu Ala Leu 1830 Leu Thr	Leu 1739 Gly Gly Ser Asp Ser 1819 Leu Thr Met Ser Pro 1899 Val	Arg Arg Gly Thr Lys 1800 Ser Glu Glu Lys Asp 1880 Ser	Pro Gln Arg Pro Ser 1785 Glu Asp Gly Asp Val 1865 Leu	Pro Ile Glu Ser 1770 Arg Gly Arg Gly Lys 1850 Ala Gly Lys	Leu Glu 175! Lys Gly Ala Val Asn 183! Lys Gln Asn Lys Lys	Val 1740 Leu Pro Glu Ser Phe 1820 Thr Ser Gln Lys Ala 1900 Leu	Asn Thr Gly Met Asn 1805 His Thr Glu Glu Lys 1885 Lys	Leu Arg Ser Gly Ser 1790 Leu Glu Ile Lys Ile 1870 Lys Glu	Glu Tyr Phe Gly 1775 Leu Val Ser Gln Phe 1855 Lys Asp	Tyr Gly 1760 Gly Ala Ile Ile His 1840 Phe Ala Asp Thr
His Gly 1745 Asn Gly Glu Asp Leu 1825 Ser Lys Thr Glu Thr 1905	Lys 1730 Asn Gly Gly Val Leu 1810 Leu Val Val Val 1890 Gln	ITALE ATE OF THE OF THE ATE OF THE O	Glu Gly Arg Leu Gly 1780 Cys Met Ile Cys Tyr 1860 Val Arg Thr	Leu Glu Pro Ser 1765 Ser His Asn Ala Arg 1845 Asp Asp Asn Asp	Ser 1750 Pro Gly Leu Ala Leu 1830 Leu Thr Ala Glu 1910	Leu 1739 Gly Gly Ser Asp Ser 1819 Leu Thr Met Ser Pro 1899 Val	Arg Arg Gly Thr Lys 1800 Ser Glu Glu Lys Asp 1880 Ser Arg	Pro Gln Arg Pro Ser 1785 Glu Asp Gly Asp Val 1865 Leu Arg Asp	Pro Ile Glu Ser 1770 Arg Gly Arg Gly Lys 1850 Ala Gly Lys Gln	Glu 175! Lys Gly Ala Val Asn 183! Lys Gln Asn Lys Lys Leu 191!	Val 1740 Leu Pro Glu Ser Phe 1820 Thr Ser Gln Lys Ala 1900 Leu	Asn Thr Gly Met Asn 1805 His Thr Glu Glu Lys 1885 Lys Glu	Leu Arg Ser Gly Ser 1790 Leu Glu Ile Lys Ile 1870 Lys Glu Ala	Glu Tyr Phe Gly 1775 Leu Val Ser Gln Phe 1855 Lys Asp Pro Ser	Tyr Gly 1760 Gly Ala Ile Ile His 1840 Phe Ala Asp Thr Ala 1920
His Gly 1745 Asn Gly Glu Asp Leu 1825 Ser Lys Thr Glu Thr 1905	Lys 1730 Asn Gly Gly Val Leu 1810 Leu Val Val Val 1890 Gln	ITALE ATE OF THE OF THE ATE OF THE O	Glu Gly Arg Leu Gly 1780 Cys Met Ile Cys Tyr 1860 Val Arg Thr	Leu Glu Pro Ser 1765 Ser His Asn Ala Arg 1845 Asp Asp Clu Ala	Ser 1750 Pro Gly Leu Ala Leu 1830 Leu Thr Ala Glu 1910 Phe	Leu 1739 Gly Gly Ser Asp Ser 1819 Leu Thr Met Ser Pro 1899 Val	Arg Arg Gly Thr Lys 1800 Ser Glu Glu Lys Asp 1880 Ser Arg	Pro Gln Arg Pro Ser 1785 Glu Asp Gly Asp Val 1865 Leu Arg	Pro Ile Glu Ser 1770 Arg Gly Arg Gly Lys 1850 Ala Gly Lys Gln Arg	Glu 175! Lys Gly Ala Val Asn 183! Lys Gln Asn Lys Lys Leu 191!	Val 1740 Leu Pro Glu Ser Phe 1820 Thr Ser Gln Lys Ala 1900 Leu	Asn Thr Gly Met Asn 1805 His Thr Glu Glu Lys 1885 Lys Glu	Leu Arg Ser Gly Ser 1790 Leu Glu Ile Lys Ile 1870 Lys Glu Ala	Glu Tyr Phe Gly 1775 Leu Val Ser Gln Phe 1855 Lys Asp Pro Ser	Tyr Gly 1760 Gly Ala Ile His 1840 Phe Ala Asp Thr Ala 1920 Asp
His Gly 1745 Asn Gly Glu Asp Leu 1825 Ser Lys Thr Glu Thr 1905	Lys 1730 Asn Gly Gly Val Leu 1810 Leu Val Val Val 1890 Gln	ITALE ATE OF THE OF THE ATE OF THE O	Glu Gly Arg Leu Gly 1780 Cys Met Ile Cys Tyr 1860 Val Arg Thr	Leu Glu Pro Ser 1765 Ser His Asn Ala Arg 1845 Asp Asp Asn Asp	Ser 1750 Pro Gly Leu Ala Leu 1830 Leu Thr Ala Glu 1910 Phe	Leu 1739 Gly Gly Ser Asp Ser 1819 Leu Thr Met Ser Pro 1899 Val	Arg Arg Gly Thr Lys 1800 Ser Glu Glu Lys Asp 1880 Ser Arg	Pro Gln Arg Pro Ser 1785 Glu Asp Gly Asp Val 1865 Leu Arg Asp	Pro Ile Glu Ser 1770 Arg Gly Arg Gly Lys 1850 Ala Gly Lys Gln	Glu 175! Lys Gly Ala Val Asn 183! Lys Gln Asn Lys Lys Leu 191!	Val 1740 Leu Pro Glu Ser Phe 1820 Thr Ser Gln Lys Ala 1900 Leu	Asn Thr Gly Met Asn 1805 His Thr Glu Glu Lys 1885 Lys Glu	Leu Arg Ser Gly Ser 1790 Leu Glu Ile Lys Ile 1870 Lys Glu Ala	Glu Tyr Phe Gly 1775 Leu Val Ser Gln Phe 1855 Lys Asp Pro Ser	Tyr Gly 1760 Gly Ala Ile His 1840 Phe Ala Asp Thr Ala 1920 Asp

	1940		1945	5		195	0	
Lys Asp Asp L 1955	Leu Glu Met		Ala Val 1960	Ile Thr		Met Gln 1965	Pro	Ile
Leu Arg Phe L 1970	Leu Gln Leu	Leu 0 1975	Cys Glu	Asn His	Asn A	Arg Asp	Leu	Gln
Asn Phe Leu A	Arg Cys Gln 199		Asn Lys	Thr Asn 199		Asn Leu	Val	Cys 2000
Glu Thr Leu G	3ln Phe Leu 2005	Asp (Cys Ile	Cys Gly 2010	Ser :	Thr Thr	Gly 2015	
Leu Gly Leu I	Leu Gly Leu 2020	Tyr 1	Ile Asn 2029		Asn V	Val Ala 203		Ile
Asn Gln Thr I 2035	Leu Glu Ser		Thr Glu 2040	Tyr Cys		Gly Pro 2045	Cys	His
Glu Asn Gln A 2050		2055			2060			
Ile Thr Ala I 2065	Leu Ile Leu 207		Asp Ile	Asn Pro		Gly Lys	Lys	Arg 2080
Met Asp Leu V	Val Leu Glu 2085	Leu I	Lys Asn	Asn Ala 2090	Ser 1	Lys Leu	Leu 2095	
	2100		2105	5		211	0	
Tyr Asn Met A		2	2120		:	2125		
Met Gln Gly G 2130		2135	-	_	2140	_	_	_
Ala Ala Ser F 2145	215	0		215	5			2160
Gln Leu Ala A	2165	_		2170			2175	5
	2180		218	5		219	0	
Ala Gln Ile G 2195		2	2200		:	2205		
Phe Pro Val E 2210		2215			2220			
Arg Ile Tyr T 2225	223	0		223	5			2240
Asp Phe Phe I	2245			2250			2255	5
	2260		226	5		227	0	
Ser Phe Trp S 2275		2	2280			2285		
Leu Val Ala E 2290		2295			2300			
Glu Pro His 7 2305	231	0	_	231	5			2320
Ala Ile Val 1	2325			2330			2335	5
	2340		234	5		235	0	
Leu Phe Leu I 2355		2	2360			2365		
Met Ser Phe V		2375			2380			
Met Val Leu A	239	0		239	5			2400
Cys Ala Met C	Gly Leu Phe 2405	val I	нıs Glu	Phe Phe 2410	Tyŗ	ser Leu	Leu 2419	

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Phe Asp Leu Val Tyr Arg Glu Glu Thr Leu Leu Asn Val Ile Lys Ser
                         2425
Val Thr Arg Asn Gly Arg Pro Ile Ile Leu Thr Ala Ala Leu Ala Leu
                              2445
             2440
Ile Leu Val Tyr Leu Phe Ser Ile Val Gly Tyr Leu Phe Phe Lys Asp
          2455
                                  2460
Asp Phe Ile Leu Glu Val Asp Arg Leu Pro Asn Glu Thr Ala Gly Pro
               2470
                               2475
Glu Thr Gly Glu Ser Leu Ala Asn Asp Phe Leu Tyr Ser Asp Val Cys
                            2490 2495
            2485
Arg Val Glu Thr Gly Glu Asn Cys Thr Ser Pro Ala Pro Lys Glu Glu
               2505
         2500
Leu Leu Pro Val Glu Glu Thr Glu Gln Asp Lys Glu His Thr Cys Glu
                     2520
 2515
Thr Leu Leu Met Cys Ile Val Thr Val Leu Ser His Gly Leu Arg Ser
         2535
                                  2540
Gly Gly Val Gly Asp Val Leu Arg Lys Pro Ser Lys Glu Glu Pro
                      2555
               2550
Leu Phe Ala Ala Arg Val Ile Tyr Asp Leu Leu Phe Phe Phe Met Val
                            2570 2575
            2565
Ile Ile Ile Val Leu Asn Leu Ile Phe Gly Val Ile Ile Asp Thr Phe
         2580
                         2585
                                         2590
Ala Asp Leu Arg Ser Glu Lys Gln Lys Lys Glu Glu Ile Leu Lys Thr
                     2600
                          2605
Thr Cys Phe Ile Cys Gly Leu Glu Arg Asp Lys Phe Asp Asn Lys Thr
                                  2620
                  2615
Val Thr Phe Glu Glu His Ile Lys Glu Glu His Asn Met Trp His Tyr
               2630
                               2635
Leu Cys Phe Ile Val Leu Val Lys Val Lys Asp Ser Thr Glu Tyr Thr
            2645 2650 2655
Gly Pro Glu Ser Tyr Val Ala Glu Met Ile Arg Glu Arg Asn Leu Asp
         2660 2665 2670
Trp Phe Pro Arg Met Arg Ala Met Ser Leu Val Ser Ser Asp Ser Glu
   2675 2680
                                     2685
Gly Glu Gln Asn Glu Leu Arg Asn Leu Gln Glu Lys Leu Glu Ser Thr
   2690 2695
                                  2700
Met Lys Leu Val Thr Asn Leu Ser Gly Gln Leu Ser Glu Leu Lys Asp
2705 2710 2715 2720
Gln Met Thr Glu Gln Arg Lys Gln Lys Gln Arg Ile Gly Leu Leu Gly
            2725 2730
His Pro Pro His Met Asn Val Asn Pro Gln Gln Pro Ala
         2740
                         2745
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<210> 7
<211> 2710
<212> PRT
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<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/note = synthetic construct

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Arg 65	Tyr	Ser	Ala	Gln	Lys 70	Gln	Phe	Trp	Lys	Ala 75	Ala	Lys	Pro	Gly	Ala 80
Asn	Ser	Thr	Thr	Asp 85	Ala	Val	Leu	Leu	Asn 90	Lys	Leu	His	His	Ala 95	Ala
Asp	Leu	Glu	Lys 100	Lys	Gln	Asn	Glu	Thr 105	Glu	Asn	Arg	Lys	Leu 110	Leu	Gly
Thr	Val	Ile 115	Gln	Tyr	Gly	Asn	Val 120	Ile	Gln	Leu	Leu	His 125	Leu	Lys	Ser
	130					135					140			Glu	
145					150					155				Ser	160
				165					170					Ser 175	
		_	180					185					190	Gln	
		195					200					205		Asn	
	210					215					220			Phe	
225					230					235				Val	240
				245					250					Glu 255	
_			260					265					270	Ser	
		275					280					285		Val	
	290		_		_	295					300			Phe	
Phe	Lys	His	Leu	Ala	Thr 310	Gly	His	Tyr	Leu	Ala 315	Ala	Glu	Val	Asp	Pro 320
Asp	Phe	Glu	Glu	Glu 325	Cys	Leu	Glu	Phe	Gln 330	Pro	Ser	Val	Asp	Pro 335	Asp
Gln	Asp	Ala	Ser 340	Arg	Ser	Arg	Leu	Arg 345	Asn	Ala	Gln	Glu	Lys 350	Met	Val
_		355					360	-		_		365		Ile	
Glu	Leu 370	Asp	Pro	Thr	Thr	Leu 375	Arg	Gly	Gly	Asp	Ser 380	Leu	Val	Pro	Arg
Asn 385	Ser	Tyr	Val	Arg	Leu 390	Arg	His	Leu	Cys	Thr 395	Asn	Thr	Trp	Val	His 400
Ser	Thr	`Asn	Ile	Pro 405	Ile	Asp	Lys	Glu	Glu 410	Glu	Lys	Pro	Val	Met 415	Leu
Lys	Ile	Gly	Thr 420	Ser	Pro	Leu	Lys	Glu 425	Asp	Lys	Glu	Ala	Phe 430	Ala	Ile
Val	Pro	Val 435	Ser	Pro	Ala	Glu	Val 440	Arg	Asp	Leu	Asp	Phe 445	Ala	Asn	Asp
Ala	Ser 450	Lys	Val	Leu	Gly	Ser 455	Ile	Ala	Gly	Lys	Leu 460	Glu	Lys	Gly	Thr
Ile 465	Thr	Gln	Asn	Glu	Arg 470	Arg	Ser	Val	Thr	Lys 475	Leu	Leu	Glu	Asp	Leu 480
	Tyr	Phe	Val			Gly	Thr	Asn			Gln	Asp	Val	Leu	
Val	Val	Phe	Ser 500	485 Lys	Pro	Asn	Arg	Glu 505	490 Arg	Gln	Lys	Leu	Met 510	495 Arg	Glu
Gln	Asn	Ile 515		Lys	Gln	Ile	Phe 520		Leu	Leu	Gln	Ala 525		Phe	Thr

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	530					535					540			Asp	
545					550					555				Val	560
Arg	His	Ser	Gln	Gln 565	Asp	Tyr	Arg	Lys	Asn 570	Gln	Glu	Tyr	Ile	Ala 575	Lys
Gln	Phe	Gly	Phe 580	Met	Gln	Lys	Gln	Ile 585	Gly	Tyr	Asp	Val	Leu 590	Ala	Glu
Asp	Thr	Ile 595	Thr	Ala	Leu	Leu	His 600	Asn	Asn	Arg	Lys	Leu 605	Leu	Glu	Lys
His	Ile 610	Thr	Ala	Ala	Glu	Ile 615	Asp	Thr	Phe	Val	Ser 620	Leu	Val	Arg	Lys
Asn 625	Arg	Glu	Pro	Arg	Phe 630	Leu	Asp	Tyr	Leu	Ser 635	Asp	Leu	Cys	Val	Ser 640
Met	Asn	Lys	Ser	Ile 645	Pro	Val	Thr	Gln	Glu 650	Leu	Ile	Cys	Lys	Ala 655	Val
Leu	Asn	Pro	Thr 660	Asn	Ala	Asp	Ile	Leu 665	Ile	Glu	Thr	Lys	Leu 670	Val	Leu
Ser	Arg	Phe 675	Glu	Phe	Glu	Gly	Val 680	Ser	Thr	Gly	Glu	Asn 685	Ala	Leu	Glu
Ala	Gly 690	Glu	Asp	Glu	Glu	Glu 695	Val	Trp	Leu	Phe	Trp 700	Arg	Asp	Ser	Asn
Lys 705	Glu	Ile	Arg	Ser	Lys 710	Ser	Val	Arg	Glu	Leu 715	Ala	Gln	Asp	Ala	Lys 720
Glu	Gly	Gln	Lys	Glu 725	Asp	Arg	Asp	Val	Leu 730	Ser	Tyr	Tyr	Arg	Tyr 735	Gln
Leu	Asn	Leu	Phe 740	Ala	Arg	Met	Cys	Leu 745	Asp	Arg	Gln	Tyr	Leu 750	Ala	Ile
Asn	Glu	Ile 755	Ser	Gly	Gln	Leu	Asp 760	Val	Asp	Leu	Ile	Leu 765	Arg	Cys	Met
Ser	Asp 770	Glu	Asn	Leu	Pro	Tyr 775	Asp	Leu	Arg	Ala	Ser 780	Phe	Сув	Arg	Leu
Met 785	Leu	His	Met	His	Val 790	Asp	Arg	Asp	Pro	Gln 795	Glu	Gln	Val	Thr	Pro 800
Val	Lys	Tyr	Ala	Arg 805	Leu	Trp	Ser	Glu	Ile 810	Pro	Ser	Glu	Ile	Ala 815	Ile
Asp	Asp	Tyr	Asp 820	Ser	Ser	Gly	Ala	Ser 825	Lys	Asp	Glu	Ile	Lys 830	Glu	Arg
		835					840					845		Val	
Cys	Gln 850	Arg	Phe	Pro	Phe	Ser 855	Asp	Lys	Glu	Lys	Asn 860	Lys	Leu	Thr	Phe
Glu 865	Val	Val	Asn	Leu	Ala 870	Arg	Asn	Leu	Ile	Tyr 875	Phe	Gly	Phe	Tyr	Asn 880
Phe	Ser	Asp	Leu	Leu 885	Arg	Leu	Thr	Lys	Ile 890	Leu	Leu	Ala	Ile	Leu 895	Asp
Cys	Val	His	Val 900	Thr	Thr	Ile	Phe	Pro 905	Ile	Ser	Lys	Met	Thr 910	Lys	Gly
Glu	Glu	Asn 915	Lys	Gly	Ser	Asn	Val 920	Met	Arg	Ser	Ile	His 925	Gly	Val	Gly
Glu	Leu 930	Met	Thr	Gln	Val	Val 935	Leu	Arg	Gly	Gly	Gly 940	Phe	Leu	Pro	Met
Thr 945	Pro	Met	Ala	Ala	Ala 950	Pro	Glu	Gly	Asn	Val 955	Lys	Gln	Ala	Glu	Pro 960
	Lys	Glu	Asp	Ile 965		Val	Met	Asp	Thr 970	Lys	Leu	Lys	Ile	Ile 975	Glu
Ile	Leu	Gln	Phe 980		Leu	Asn	Val	Arg 985		Asp	Tyr	Arg	Ile 990	Ser	Cys
Leu	Leu	Cys 995		Phe	Lys	Arg	Glu 100	Phe	Asp	Glu	Ser	Asn 100		Gln	Ser

Ser Glu Thr Ser 1010	Ser Gly Asn		Glu Gly Pro 1020	Ser Asn Val
Pro Gly Ala Leu	Asp Phe Glu	His Ile Glu	Glu Gln Ala	Glu Gly Ile
1025	1030		1035	1040
Phe Gly Gly Ser	Glu Glu Asn 1045	Thr Pro Leu 105		Asp His Gly 1055
Gly Arg Thr Phe		Leu Leu His	Leu Thr Met	His Asp Tyr 1070
Pro Pro Leu Val 1075		Leu Gln Leu 1080	Leu Phe Arg 108	
Gln Arg Gln Glu 1090	Val Leu Gln 109		Gln Val Gln 1100	Leu Leu Val
Thr Ser Gln Asp	Val Asp Asn 1110	Tyr Lys Gln	Ile Lys Gln 1115	Asp Leu Asp 1120
Gln Leu Arg Ser	Ile Val Glu 1125	Lys Ser Glu 113		Tyr Lys Gly 1135
Gln Gly Pro Asp		Asp Gly Ala 1145	Ser Gly Glu	Asn Glu His 1150
Lys Lys Thr Glu 1155	Glu Gly Thr	Ser Lys Pro 1160	Leu Lys His 116	
Ser Ser Tyr Asn 1170	Tyr Arg Val	_	Ile Leu Ile 1180	Arg Leu Ser
Lys Leu Cys Val 1185	Gln Glu Ser 1190	Ala Ser Val	Arg Lys Ser 1195	Arg Lys Gln 1200
Gln Gln Arg Leu		Met Gly Ala 121	His Ala Val	
Leu Leu Gln Ile	Pro Tyr Glu			
Ile Met Arg Leu 1235			Asn Phe Cys	Ala Gly Asn
Gln Gln Asn Gln 1250	Ala Leu Leu 125	His Lys His		
Pro Gly Ile Leu				Met Asn Asn 1280
1265 Phe Gln Leu Cys	Ser Glu Ile		Val Val Gln	His Phe Val
His Cys Ile Glu				
130 Gln Thr Ile Val		1305 Gly Lys Phe	· Ile Lys Lys	1310 Cys Gln Asp
1315 Met Val Met Ala	Glu Leu Val	1320 Asn Ser Gly	132 Glu Asp Val	
1330	133	5	1340	
Tyr Asn Asp Arg 1345	1350		1355	1360
Glu Arg Asp Arg	Met Asp Glu 1365	Asn Ser Pro		Tyr His Ile 1375
His Leu Val Glu 138		Val Cys Thr 1385	Glu Gly Lys	Asn Val Tyr 1390
Thr Glu Ile Lys 1395	Cys Asn Ser	Leu Leu Pro	Leu Asp Asp 140	
Val Val Thr His 1410	Glu Asp Cys 141		Val Lys Ile 1420	Ala Tyr Ile
Asn Phe Leu Asn				Met Lys Glu
1425	1430		1435	1440
Ile Tyr Thr Ser	Asn His Met 1445	Trp Lys Leu 145		Phe Leu Val 1455
Asp Ile Cys Arg 146	_	Asn Thr Ser 1465	Asp Arg Lys	His Ala Asp 1470
Ser Val Leu Glu	Lys Tyr Val			
1475		1480	148	5

Thr Phe Phe Ser Ser Pro Phe Ser Asp Gln Ser Thr Thr Leu Gln Thr 1500 1495 Arg Gln Pro Val Phe Val Gln Leu Leu Gln Gly Val Phe Arg Val Tyr 1515 1510 His Cys Asn Trp Leu Met Pro Ser Gln Lys Ala Ser Val Glu Ser Cys 1530 Ile Arq Val Leu Ser Asp Val Ala Lys Ser Arg Ala Ile Ala Ile Pro 1545 Val Asp Leu Asp Ser Gln Val Asn Asn Leu Phe Leu Lys Ser His Asn 1555 1560 1565 Ile Val Gln Lys Thr Ala Met Asn Trp Arg Leu Ser Ala Arg Asn Ala 1570 1575 1580 Ala Arg Arg Asp Ser Val Leu Ala Ala Ser Arg Asp Tyr Arg Asn Ile 1590 1595 Ile Glu Arg Leu Gln Asp Ile Val Ser Ala Leu Glu Asp Arg Leu Arg 1605 1610 1615 Pro Leu Val Gln Ala Glu Leu Ser Val Leu Val Asp Val Leu His Arg 1620 1625 Pro Glu Leu Leu Phe Pro Glu Asn Thr Asp Ala Arg Arg Lys Cys Glu 1635 1640 1645 Ser Gly Gly Phe Ile Cys Lys Leu Ile Lys His Thr Lys Gln Leu Leu 1660 1650 1655 Glu Glu Asn Glu Glu Lys Leu Cys Ile Lys Val Leu Gln Thr Leu Arg 1670 1675 Glu Met Met Thr Lys Asp Arg Gly Tyr Gly Glu Lys Gly Glu Ala Leu 1685 1690 Arq Gln Ile Leu Val Asn Arg Tyr Tyr Gly Asn Ile Arg Pro Ser Gly 1710 1700 1705 Arg Arg Glu Asp Leu Thr Ser Phe Gly Asn Gly Pro Leu Ser Pro Gly 1715 1720 1725 Gly Pro Ser Lys Pro Gly Gly Gly Gly Gly Pro Gly Ser Gly Ser 1740 1730 1735 Thr Ser Arg Gly Glu Met Ser Leu Ala Glu Val Gln Cys His Leu Asp 1745 1750 1755 Lys Glu Gly Ala Ser Asn Leu Val Ile Asp Leu Ile Met Asn Ala Ser 1765 1770 Ser Asp Arg Val Phe His Glu Ser Ile Leu Leu Ala Ile Ala Leu Leu 1780 1785 1790 Glu Gly Gly Asn Thr Thr Ile Gln His Ser Phe Phe Cys Arg Leu Thr 1795 1800 1805 Glu Asp Lys Lys Ser Glu Lys Phe Phe Lys Val Phe Tyr Asp Arg Met 1810 1815 1820 Lys Val Ala Gln Glu Ile Lys Ala Thr Val Thr Val Asn Thr Ser 1830 1835 1840 Asp Leu Gly Asn Lys Lys Lys Asp Asp Glu Val Asp Arg Asp Ala Pro 1845 1850 Ser Arg Lys Lys Ala Lys Glu Pro Thr Thr Gln Ile Thr Glu Glu Val 1860 1865 Arg Asp Gln Leu Leu Glu Ala Ser Ala Ala Thr Arg Lys Ala Phe Thr 1875 1880 1885 Thr Phe Arg Arg Glu Ala Asp Pro Asp Asp His Tyr Gln Ser Gly Glu 1895 1900 Gly Thr Gln Ala Thr Thr Asp Lys Ala Lys Asp Asp Leu Glu Met Ser 1910 1915 Ala Val Ile Thr Ile Met Gln Pro Ile Leu Arg Phe Leu Gln Leu Leu 1930 1925 Cys Glu Asn His Asn Arg Asp Leu Gln Asn Phe Leu Arg Cys Gln Asn 1940 1945 Asn Lys Thr Asn Tyr Asn Leu Val Cys Glu Thr Leu Gln Phe Leu Asp 1960

Cys Ile Cys 1970		1975	5		1980		
Ile Asn Glu 1985		Val Ala 1990	Leu Ile	Asn Gln 199		Glu Ser	Leu 2000
Thr Glu Tyr	Cys Gln 2005	_	Cys His	Glu Asn 2010	Gln Asn	Cys Ile 2019	
Thr His Glu	Ser Asn 2020	Gly Ile	Asp Ile		Ala Leu	Ile Leu 2030	Asn
Asp Ile Asn 2035		Gly Lys	Lys Arg 2040	Met Asp	Leu Val 204		Leu
Lys Asn Asn 2050		2055	5		2060		
Asp Ser Glu 2065		Glu Arg 2070	Ile Leu	Tyr Asn 207		Pro Lys	Glu 2080
Leu Val Glu	2085			2090		209	5
Glu Asp Gly	2100		210	5		2110	
Gly His Asn 2115	5		2120		212	:5	
Glu Leu Gln 2130		2135	5		2140		
Ala Leu Glu 2145		2150		215	5		2160
Leu Asp Arg	2165			2170		217	5
Glu Phe Leu	2180		218	5		2190	
Arg Asp Glu 2195	5		2200		220)5	
Asp Leu Phe 2210		2215	5		2220		
Val Leu Tyr 2225		2230		223	5		2240
Phe Asn Leu	2245			2250		225	5
Phe Lys Gly	2260		226	5		2270	
Leu Trp Thr 2275	5		2280		228	35	
Lys Pro His 2290	Gly Ile	Arg Ala 2295		Ala Ser	Thr Ile	e Leu Arg	Leu
Ile Phe Ser 2305		2310		231	5		2320
Asn Val Cys	2325			2330		233	5
Gly Thr Phe	2340		234	5		2350	
Leu Tyr His 2355		Tyr Leu	Leu Ile 2360	Cys Ala	Met Gly 236		Val
His Glu Phe 2370	Phe Tyr	Ser Leu 2375		Phe Asp	Leu Val 2380	l Tyr Arg	Glu
Glu Thr Leu 2385	Leu Asn	Val Ile 2390	Lys Ser	Val Thr 239	-	n Gly Arg	Pro 2400
Ile Ile Leu	Thr Ala 2405		Ala Leu	Ile Leu 2410	Val Tyr	Leu Phe 241	
-1 1 01						. 01., 17.1	7
lie Val Gly	Tyr Leu 2420		Lys Asp 242		Ile Lei	2430	Asp
Arg Leu Pro	Tyr Leu 2420 Asn Glu	Phe Phe	242	5		2430 ı Ser Leu	

Asn Asp Phe Leu Tyr Ser Asp Val Cys Arg Val Glu Thr Gly Glu Asn Cys Thr Ser Pro Ala Pro Lys Glu Glu Leu Leu Pro Val Glu Glu Thr 2470 2475 Glu Gln Asp Lys Glu His Thr Cys Glu Thr Leu Leu Met Cys Ile Val 2490 2485 Thr Val Leu Ser His Gly Leu Arg Ser Gly Gly Val Gly Asp Val 2500 2505 Leu Arg Lys Pro Ser Lys Glu Glu Pro Leu Phe Ala Ala Arg Val Ile 2520 2525 2515 Tyr Asp Leu Leu Phe Phe Met Val Ile Ile Val Leu Asn Leu 2535 2540 Ile Phe Gly Val Ile Ile Asp Thr Phe Ala Asp Leu Arg Ser Glu Lys 2550 2555 Gln Lys Lys Glu Glu Ile Leu Lys Thr Thr Cys Phe Ile Cys Gly Leu 2565 2570 Glu Arg Asp Lys Phe Asp Asn Lys Thr Val Thr Phe Glu Glu His Ile 2585 2580 Lys Glu Glu His Asn Met Trp His Tyr Leu Cys Phe Ile Val Leu Val 2600 Lys Val Lys Asp Ser Thr Glu Tyr Thr Gly Pro Glu Ser Tyr Val Ala 2615 2620 Glu Met Ile Arg Glu Arg Asn Leu Asp Trp Phe Pro Arg Met Arg Ala 2630 2635 Met Ser Leu Val Ser Ser Asp Ser Glu Gly Glu Gln Asn Glu Leu Arg 2645 2650 2655 Asn Leu Gln Glu Lys Leu Glu Ser Thr Met Lys Leu Val Thr Asn Leu 2660 2665 2670 Ser Gly Gln Leu Ser Glu Leu Lys Asp Gln Met Thr Glu Gln Arg Lys 2675 2680 2685 Gln Lys Gln Arg Ile Gly Leu Leu Gly His Pro Pro His Met Asn Val 2695 2700 Asn Pro Gln Gln Pro Ala 2710

<210> 8

<211> 2749

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:/note =
 synthetic construct

<400> 8

Met Ser Asp Lys Met Ser Ser Phe Leu His Ile Gly Asp Ile Cys Ser 10 Leu Tyr Ala Glu Gly Ser Thr Asn Gly Phe Ile Ser Thr Leu Gly Leu 20 25 Val Asp Asp Arg Cys Val Val Gln Pro Glu Ala Gly Asp Leu Asn Asn 40 Pro Pro Lys Lys Phe Arg Asp Cys Leu Phe Lys Leu Cys Pro Met Asn 55 Arg Tyr Ser Ala Gln Lys Gln Phe Trp Lys Ala Ala Lys Pro Gly Ala 70 Asn Ser Thr Thr Asp Ala Val Leu Leu Asn Lys Leu His His Ala Ala 90 Asp Leu Glu Lys Lys Gln Asn Glu Thr Glu Asn Arg Lys Leu Leu Gly 100 105

Thr	Val	Ile 115	Gln	Tyr	Gly	Asn	Val 120	Ile	Gln	Leu	Leu	His 125	Leu	Lys	Ser
Asn	Lys 130		Leu	Thr	Val	Asn 135	Lys	Arg	Leu	Pro	Ala 140	Leu	Leu	Glu	Lys
_			_	77-7	m1		70	~ 1		a1		a1	a1	G	m
	Ата	Met	Arg	vai		Leu	Asp	GIU	Ата		ASII	Glu	GIY	Ser	
145					150					155	_				160
Phe	Tyr	Ile	Gln	Pro 165	Phe	Tyr	Lys	Leu	Arg 170	Ser	Ile	Gly	Asp	Ser 175	Val
Val	Tle	Glv	Asp	Lvs	Val	Val	Leu	Asn	Pro	Val	Asn	Ala	Glv	Gln	Pro
		2	180	-				185					190		
T.=11	ніс	Δla		Ser	His	Gln	Len		Agn	Asn	Pro	Gly		Asn	Glu
пси	1110	195	502	502	1110	0.2.12	200					205	-,-		
170 T	7 an		3723	7 an	Care	7 an		Car	Trn	Tare	Tle	Val	T 11	Dhe	Met
vaı		Ser	val	ASII	Cys	215	1111	Jer	тър	цуз	220	Val	пси	£ 11C	rice
T	210	0	7	7	T		7.~~	Tla	T 011	T	_	C1	7.00	7707	1707
_	пр	ser	Asp	ASII		Asp	Asp	116	Бец		GIY	Gly	Asp	vai	
225	_		'		230	~7	~ 1		71 -	235	m)	G	3	a 1	240
Arg	Leu	Pne	His		Glu	GIN	GIU	гуѕ		ьeu	Thr	Cys	Asp		HIS
	_	_		245			_	_	250	_,		_		255	
Arg	Lys	Lys		His	Val	Phe	Leu		Thr	Thr	GIA	Arg		Ser	Ala
			260				_	265			_	_	270		_
Thr	Ser	Ala	Thr	Ser	Ser	Lys	Ala	Leu	\mathtt{Trp}	Glu	Val	Glu	Val	Val	Gln
		275					280					285			
His	Asp	Pro	Cys	Arg	Gly	Gly	Ala	Gly	Tyr	Trp	Asn	Ser	Leu	Phe	Arg
	290					295					300				
Phe	Lys	His	Leu	Ala	Thr	Gly	His	Tyr	Leu	Ala	Ala	Glu	Val	Asp	Pro
305	_				310					315					320
Asp	Phe	Glu	Glu	Glu	Cys	Leu	Glu	Phe	Gln	Pro	Ser	Val	Asp	Pro	Asp
-				325	-				330				_	335	_
Gln	Asp	Ala	Ser	Ara	Ser	Ara	Leu	Arq	Asn	Ala	Gln	Glu	Lvs	Met	Val
			340					345					350		
Tvr	Ser	Leu		Ser	Val	Pro	Glu		Asn	Asp	Ile	Ser		Ile	Phe
-1-		355					360	1				365			
Glu	T.em		Pro	Thr	Thr	Len		Glv	Glv	Asp	Ser	Leu	Val	Pro	Ara
OIu	370	пор	110		1111	375	9			1100	380	Luu			9
7 ~ ~		Тиг	v-1	7 ~~	Len		uic	T.011	Care	Thr		Thr	Trn	Val	Hic
	per	TAT	val	Arg	390	AIG	птъ	пец	Cys	395	ASII	1111	ırp	vai	400
385	mb	70	T1.	Dwo		7	T	<i>α</i> 1	C1.,		Two	Dro	37-1	Mot	
ser	THE	ASII	тте		TIE	Asp	ьуѕ	GIU		GIU	цуѕ	Pro	vaı		ьец
_		~ 7	m1	405		.	7	a 1	410	T	67		m1	415	- 1 -
ьуs	шe	GIY		ser	Pro	Leu	гàг		Asp	гÀг	GIU	Ala		Ала	TIE
			420	_				425	_	_	_	_,	430	_	_
Val	Pro			Pro	Ala			_	Asp	Leu	_	Phe		Asn	Asp
		435					440					445		_	
Ala	Ser	Lys	Val	Leu	Gly	Ser	Ile	Ala	Gly	Lys	Leu	Glu	Lys	Gly	Thr
	450					455					460				
Ile	Thr	Gln	Asn	Glu	Arg	Arg	Ser	Val	Thr	Lys	Leu	Leu	Glu	Asp	Leu
465					470					475					480
Val	Tyr	Phe	Val	Thr	Gly	Gly	Thr	Asn	Ser	Gly	Gln	Asp	Val	Leu	Glu
				485					400					495	
Val				400					490					100	
	Val	Phe	Ser		Pro	Asn	Arg	Glu		Gln	Lys	Leu	Met		Glu
	Val	Phe			Pro	Asn	Arg	Glu 505		Gln	Lys	Leu	Met 510		Glu
Gln			500	Lys				505	Arg		_		510	Arg	
Gln		Ile	500	Lys			Phe	505	Arg		_	Ala	510	Arg	Glu Thr
	Asn	Ile 515	500 Leu	Lys Lys	Gln	Ile	Phe 520	505 Lys	Arg Leu	Leu	Gln	Ala 525	510 Pr _. o	Arg Phe	Thr
	Asn Cys	Ile 515	500 Leu	Lys Lys	Gln	Ile Met	Phe 520	505 Lys	Arg Leu	Leu	Gln Glu	Ala 525	510 Pr _. o	Arg Phe	
Asp	Asn Cys 530	Ile 515 Gly	500 Leu Asp	Lys Lys Gly	Gln Pro	Ile Met 535	Phe 520 Leu	505 Lys Arg	Arg Leu Leu	Leu Glu	Gln Glu 540	Ala 525 Leu	510 Pro Gly	Arg Phe Asp	Thr Gln
Asp Arg	Asn Cys 530	Ile 515 Gly	500 Leu Asp	Lys Lys Gly	Gln Pro Arg	Ile Met 535	Phe 520 Leu	505 Lys Arg	Arg Leu Leu	Leu Glu Leu	Gln Glu 540	Ala 525 Leu	510 Pro Gly	Arg Phe Asp	Thr Gln Leu
Asp Arg 545	Asn Cys 530 His	Ile 515 Gly Ala	500 Leu Asp Pro	Lys Lys Gly Phe	Gln Pro Arg 550	Ile Met 535 His	Phe 520 Leu Ile	505 Lys Arg Cys	Arg Leu Leu Arg	Leu Glu Leu 555	Gln Glu 540 Cys	Ala 525 Leu Tyr	510 Pro Gly Arg	Arg Phe Asp Val	Thr Gln Leu 560
Asp Arg 545	Asn Cys 530 His	Ile 515 Gly Ala	500 Leu Asp Pro	Lys Lys Gly Phe Gln	Gln Pro Arg 550	Ile Met 535 His	Phe 520 Leu Ile	505 Lys Arg Cys	Arg Leu Leu Arg Asn	Leu Glu Leu 555	Gln Glu 540 Cys	Ala 525 Leu	510 Pro Gly Arg	Arg Phe Asp Val	Thr Gln Leu 560
Asp Arg 545 Arg	Asn Cys 530 His	Ile 515 Gly Ala Ser	500 Leu Asp Pro Gln	Lys Lys Gly Phe Gln 565	Gln Pro Arg 550 Asp	Ile Met 535 His	Phe 520 Leu Ile Arg	505 Lys Arg Cys Lys	Arg Leu Leu Arg Asn 570	Leu Glu Leu 555 Gln	Gln Glu 540 Cys	Ala 525 Leu Tyr Tyr	510 Pro Gly Arg	Arg Phe Asp Val Ala 575	Thr Gln Leu 560 Lys
Asp Arg 545 Arg	Asn Cys 530 His	Ile 515 Gly Ala Ser	500 Leu Asp Pro Gln	Lys Lys Gly Phe Gln 565	Gln Pro Arg 550 Asp	Ile Met 535 His	Phe 520 Leu Ile Arg	505 Lys Arg Cys Lys	Arg Leu Leu Arg Asn 570	Leu Glu Leu 555 Gln	Gln Glu 540 Cys	Ala 525 Leu Tyr Tyr	510 Pro Gly Arg	Arg Phe Asp Val Ala 575	Thr Gln Leu 560

Asp	Thr		Thr	Ala	Leu	Leu	His 600	Asn	Asn	Arg	Lys	Leu 605	Leu	Glu	Lys
His	Ile 610	595 Thr	Ala	Ala	Glu	Ile 615	-	Thr	Phe	Val	Ser 620		Val	Arg	Lys
Asn		Glu	Pro	Arg	Phe	Leu	Asp	Tyr	Leu	Ser		Leu	Cys	Val	Ser
625	•				630			-		635					640
	Δen	Lvc	Ser	Tle		Val	Thr	Gln	Glu	Leu	Tle	Cvs	Lvs	Δla	
Mec	AUII	шуы	501	645	110	V 44 1		0111	650			0,72	-75	655	
T	7	D	mb		. ה ב ת	7	т1.	T 0		C1.,	The	Taro	Low		T 011
ьeu	Asn	PIO		ASII	Ата	Asp	116		TIE	GIU	THE	ьуь		val	ьeu
		_	660					665			3	_	670	_	
Ser	Arg		Glu	Phe	GIu	Gly		Ser	Thr	GIY	GIU		Ala	Leu	Glu
		675					680					685			
Ala	Gly	Glu	Asp	Glu	Glu	Glu	Val	Trp	Leu	Phe	Trp	Arg	Asp	Ser	Asn
	690					695					700				
Lys	Glu	Ile	Arg	Ser	Lys	Ser	Val	Arg	Glu	Leu	Ala	Gln	Asp	Ala	Lys
705			_		710			_		715			_		720
Glu	Glv	Gln	Lvs	Glu	Asp	Arg	Asp	Val	Leu	Ser	Tyr	Tyr	Arq	Tyr	Gln
	1			725			_		730		-	-		735	
Leu	Δen	T.e.11	Dhe		Δra	Met	Cvs	Len		Ara	Gln	Tvr	Len		Tle
пси	HOII	пси	740	ALG	2.3	rice	Cys	745	тор	1119	0111	-1-	750	711 G	110
70	a 1	77 -		a 1	~1	T	7		7 ~~~	T 0	T10	T 011		C	Mot
ASI	GIU		ser	GIY	GIII	Leu	-	vai	Asp	ьец	тте		Arg	Cys	Met
_	_	755	_	_	_	_	760	_	_		_	765	_	_	_
Ser	_	Glu	Asn	Leu	Pro	Tyr	Asp	Leu	Arg	Ala		Phe	Cys	Arg	Leu
	770					775					780				
Met	Leu	His	Met	His	Val	Asp	Arg	Asp	Pro	Gln	Glu	Gln	Val	Thr	Pro
785					790					795					800
Val	Lys	Tyr	Ala	Arg	Leu	Trp	Ser	Glu	Ile	Pro	Ser	Glu	Ile	Ala	Ile
	_	_		805					810					815	
Asp	Asp	Tvr	asp	Ser	Ser	Gly	Ala	Ser	Lys	Asp	Glu	Ile	Lys	Glu	Arq
			820			-		825	_	-			830		_
Dhe	Δla	Gln		Met	Glu	Phe	Val		Glu	Tvr	Len	Ara		Val	Val
1110	HΙα	835		1100	OLU	1110	840	010	0.1.4	-1-		845	p	•42	
0	015		Dho	Dro	Dho	Cor		Tara	C1.,	Tara	7 an		T 011	Thr	Dho
Cys		Arg	FIIC	PIO	PIIC	Ser	Asp	цуз	GIU	цуъ		шуз	пец	TIII	FIIC
~ 7	850		~	.		855	7	T	- 7-		860	a 1	Dl	П	7
	vaı	vaı	Asn	ьeu		Arg	ASII	ьeu	тте		Pne	GIÀ	Pne	TAL	
865	_	_	_	_	870	_	1	_		875	_		3	_	880
Phe	Ser	Asp	Leu		Arg	Leu	Thr	гуз		ьeu	Leu	Ala	TIE		Asp
				885					890					895	
Cys	Val	His	Val	Thr	Thr	Ile	Phe	Pro	Ile	Ser	Lys	Met	Thr	Lys	Gly
			900					905					910		
Glu	Glu	Asn	Lys	Gly	Ser	Asn	Val	Met	Arg	Ser	Ile	His	Gly	Val	Gly
		915					920					925			
Glu	Leu	Met	Thr	Gln	Val	Val	Leu	Arg	Gly	Gly	Gly	Phe	Leu	Pro	Met
	930					935					940				
Thr	Pro	Met	Ala	Ala	Ala	Pro	Glu	Gly	Asn	Val	Lys	Gln	Ala	Glu	Pro
945					950			_		955	-				960
	Lvs	Glu	Asn	Tle		Val	Met	Asp	Thr		Leu	Lvs	Tle	Tle	
Q14	_	014	1100	965					970	-,-		2,0		975	010
т1.	T 011	Cln	Dho		T 011	7 an	175]	7~~		7 cn	Tr. rx	720	Tla		Cvc
TIE	цец	GIII		TTE	пеп	Asn	vai		цец	Asp	TAT	Arg		Ser	Cys
_	_	_	980	_,	_	_		985	_	~3	_	_	990	~7	_
Leu	Leu	_	Ile	Phe	ьуs	Arg			Asp	GIu	Ser			GIn	ser
		995					1000					100			
Ser	Glu	Thr	Ser	Ser	Gly	Asn	Ser	Ser	Gln	Glu	Gly	Pro	Ser	Asn	Val
	101)				1015	5				102	0			
Pro	Gly	Ala	Leu	Asp	Phe	Glu	His	Ile	Glu	Glu	Gln	Ala	Glu	Gly	Ile
102	_			-	103					103				_	1040
		Glv	Ser	Glu		Asn	Thr	Pro	Leu			Asp	qaA	His	
	1	1		1045					105	-		- 1		105	
Glv	Ara	Thr	Phe			Val	Leu	Len			Thr	Met	His		
y	٠ ح		1060		9		cu	106					107		-1-

44

	Pro	1075	5				1080)				1085	5		
Gln	Arg 1090		Glu	Val	Leu	Gln 1095		Phe	Lys	Gln	Val 1100		Leu	Leu	Val
Thr 1109	Ser	Gln	Asp	Val	Asp 1110		Tyr	Lys	Gln	Ile 1115	_	Gln	Asp	Leu	Asp 1120
	Leu	Arg	Ser	Ile 1129		Glu	Lys	Ser	Glu 1130		Trp	Val	Tyr	Lys 1135	
Gln	Gly	Pro	Asp	Glu		Met	Asp	Gly 1145	Ala		Gly	Glu	Asn 1150	Glu	
Lys	Lys	Thr 1155	Glu		Gly	Thr	Ser 1160	Lys		Leu	Lys	His 1165	Glu		Thr
Ser	Ser 1170	Tyr		Tyr	Arg	Val 1175	Val		Glu	Ile	Leu 1180	Ile		Leu	Ser
Lys 118!	Leu		Val	Gln	Glu 1190	Ser		Ser	Val	Arg 1195	Lys		Arg	Lys	Gln 1200
	Gln	Arg	Leu	Leu 1205	Arg		Met	Gly	Ala 1210	His		Val	Val	Leu 1219	
Leu	Leu	Gln	Ile 1220	Pro		Glu	Lys	Ala 1225	Glu		Thr	Lys	Met 1230		Glu
Ile	Met	Arg 1235	Leu		His	Glu	Phe 1240		Gln	Asn	Phe	Cys 1245		Gly	Asn
Gln	Gln		Gln	Ala	Leu			Lys	His	Ile			Phe	Leu	Asn
Pro	1250 Gly		Len	Glu	Δla	1255 Val		Met	Gln	His	1260 Tle		Met	Asn	Asn
126	5				1270)				1275	5				1280
Phe	Gln	Leu	Cys	Ser 1285		Ile	Asn		Arg 1290		Val	Gln	His	Phe 129	
His	Cys	Ile	Glu 1300		His	Gly	Arg	Asn 1305		Gln	Tyr	Ile	Lys 1310		Leu
Gln	Thr	Ile 1315		Lys	Ala	Glu	Gly 1320		Phe	Ile	Lys	Lys 1325		Gln	Asp
Met	Val 1330		Ala	Glu	Leu	Val 1335		Ser	Gly	Glu	Asp 1340		Leu	Val	Phe
	Asn	Asp	Arg	Ala			Gln	Thr	Leu	Ile 1355		Met	Met	Arg	Ser 1360
134: Glu	Arg	Asp	Arg	Met	1350 Asp		Asn	Ser	Pro			Met	Tyr	His	
	_			1369	5				1370	0				137	5
	Leu		1380)				1385	5				1390)	
	Glu													Val	Arg
	Val 1410	Thr					Ile					Ile		Tyr	Ile
Asn	Phe		Asn	His	Cys			Asp	Thr	Glu	Val	Glu	Met	Lys	Glu
142		 1		_	1430			T	Ŧ	1435		3	Dh.	7	1440
Ile	Tyr	Thr	ser	Asn 1445		Met	Trp	ьys	ьеи 1450		GIU	Asn	Pne	ьеи 145	
Asp	Ile	Cys	Arg 1460	Ala		Asn	Asn	Thr 1469	Ser		Arg	Lys	His 1470	Ala	
Ser	Val	Leu 1475	Glu		Tyr	Val	Thr 1480	Glu		Val	Met	Ser 1485		Val	Thr
Thr	Phe 1490	Phe		Ser	Pro	Phe 149!	Ser		Gln	Ser	Thr 150	Thr		Gln	Thr
Arg	Gln		Val	Phe	Val			Leu	Gln	Gly			Arg	Val	Tyr
150		_	_	_	151				_	1519			a i	a -	1520
	Cys		_	152	5				153	0				153	5
Ile	Arg	Val	Leu 1540		Asp	Val	Ala	Lys 1549		Arg	Ala	Ile	Ala 1550		Pro
			101	•					-					_	

155	Asp Ser	Gln		Asn 1560		Leu	Phe	Leu	Lys 1565		His	Asn
Ile Val Gln 1570	Lys Th	Ala	Met 1575		Trp	Arg	Leu	Ser 1580		Arg	Asn	Ala
Ala Arg Arg 1585	Asp Ser	Val 1590		Ala	Ala	Ser	Arg 1595		Tyr	Arg	Asn	Ile 1600
Ile Glu Arg	Leu Gla		Ile	Val	Ser	Ala 1610		Glu	Asp	Arg	Leu 1615	
Pro Leu Val	Gln Ala	a Glu	Leu	Ser	Val 1625		Val	Asp	Val	Leu 1630		Arg
Pro Glu Leu 163!		e Pro	Glu	Asn 1640		Asp	Ala	Arg	Arg 1645		Cys	Glu
Ser Gly Gly 1650		_	1655	5				1660)			
Glu Glu Asn 1665	Glu Gl	1 Lys 1670		Cys	Ile	Lys	Val 1675		Gln	Thr	Leu	Arg 1680
Glu Met Met	Thr Lys		Arg	Gly		Gly 1690		Lys	Gln	Ile	Ser 1695	
Asp Glu Leu	Glu Ası 1700	n Ala	Glu	Leu	Pro 1705		Pro	Pro	Glu	Ala 1710		Asn
Ser Thr Glu 171		ı Glu	Pro	Ser 1720		Pro	Leu	Arg	Glņ 1725		Glu	Asp
His Lys Arg 1730	Gly Gl	ı Ala	Leu 1735		Gln	Ile	Leu	Val 1740		Arg	Tyr	Tyr
Gly Asn Ile	Arg Pro	Ser 1750	Gly		Arg	Glu	Asp 1755	Leu		Ser	Phe	Gly 1760
1745 Asn Gly Pro		r Pro		Gly	Pro		Lys		Gly	Gly		Gly
Gly Gly Pro	_		Ser	Thr				Glu	Met			
Glu Val Gln	_	s Leu	Asp				Ala	Ser				Ile
179	5			1800)				1805	•		
Asp Leu Ile	Met As	n Ala			Asp	Arg	Val			Glu	Ser	Ile
1810 Leu Leu Ala		a Leu	1815 Leu	5			Asn	1820 Thr)			His
1810	Ile Ala	a Leu 1830	1815 Leu 0	Glu	Gly	Gly	Asn 1835	1820 Thr) Thr	Ile	Gln	His 1840
1810 Leu Leu Ala 1825 Ser Phe Phe	Ile Ala	a Leu 1830 g Leu 45	1815 Leu O Thr	Glu Glu	Gly Asp	Gly Lys 1850	Asn 1835 Lys	1820 Thr Ser	Thr Glu	Ile Lys	Gln Phe 1855	His 1840 Phe
1810 Leu Leu Ala 1825 Ser Phe Phe Lys Val Phe	Ile Ala Cys Arg 18 Tyr Asg 1860	a Leu 1830 J Leu 45 D Arg	1815 Leu O Thr	Glu Glu Glu Lys	Gly Asp Val 1865	Gly Lys 1850 Ala	Asn 1835 Lys) Gln	1820 Thr Ser Gln	Thr Glu Glu	Ile Lys Ile 1870	Gln Phe 1855 Lys	His 1840 Phe Ala
1810 Leu Leu Ala 1825 Ser Phe Phe Lys Val Phe Thr Val Thr 187	Cys Are 18 Tyr As 1860 Val As	Leu 1830 Jeu 45 DArg	1815 Leu Thr Met Ser	Glu Glu Lys Asp	Gly Asp Val 1865 Leu	Gly Lys 1850 Ala Gly	Asn 1835 Lys) Gln Asn	1820 Thr Ser Gln Lys	Thr Glu Glu Lys 1885	Ile Lys Ile 1870 Lys	Gln Phe 1855 Lys) Asp	His 1840 Phe Ala Asp
1810 Leu Leu Ala 1825 Ser Phe Phe Lys Val Phe Thr Val Thr	Cys Are 18 Tyr As 1860 Val As	Leu 1830 Jeu 45 DArg	1815 Leu Thr Met Ser	Glu Glu Lys Asp 1880 Ser	Gly Asp Val 1865 Leu	Gly Lys 1850 Ala Gly	Asn 1835 Lys) Gln Asn	1820 Thr Ser Gln Lys	Thr Glu Glu Lys 1885 Lys	Ile Lys Ile 1870 Lys	Gln Phe 1855 Lys) Asp	His 1840 Phe Ala Asp
Leu Leu Ala 1825 Ser Phe Phe Lys Val Phe Thr Val Thr 187 Glu Val Asp 1890 Thr Gln Ile	Cys Are 18- Tyr As; 1860 Val As: 5 Arg As;	a Leu 1830 g Leu 45 p Arg n Thr p Ala	1815 Leu Thr Met Ser Pro 1895 Val	Glu Glu Lys Asp 1880 Ser	Gly Asp Val 1865 Leu Arg	Gly Lys 1850 Ala Gly Lys	Asn 1835 Lys Gln Asn Lys	1820 Thr Ser Gln Lys Ala 1900 Leu	Thr Glu Glu Lys 1885 Lys	Ile Lys Ile 1870 Lys Glu	Gln Phe 1855 Lys Asp Pro	His 1840 Phe Ala Asp Thr
1810 Leu Leu Ala 1825 Ser Phe Phe Lys Val Phe Thr Val Thr 187 Glu Val Asp 1890	Cys Arg 18- Tyr As; 1860 Val As: Arg As; Thr Gl:	A Leu 1830 G Leu 45 p Arg n Thr p Ala 1 Glu 1910 a Phe	1815 Leu Thr Met Ser Pro 1895 Val	Glu Glu Lys Asp 1880 Ser Arg	Gly Asp Val 1865 Leu Arg Asp	Gly Lys 1850 Ala Gly Lys Gln Arg	Asn 1835 Lys Gln Asn Lys Leu 1915 Arg	1820 Thr Ser Gln Lys Ala 1900 Leu	Thr Glu Glu Lys 1885 Lys) Glu	Ile Lys Ile 1870 Lys Glu Ala	Phe 1855 Lys Asp Pro Ser	His 1840 Phe 5 Ala Asp Thr Ala 1920 Asp
1810 Leu Leu Ala 1825 Ser Phe Phe Lys Val Phe Thr Val Thr 187 Glu Val Asp 1890 Thr Gln Ile 1905	Cys Arg 18. Tyr As; 1860 Val As: Arg As; Thr Gl Lys Al; 19 Gln Se	A Leu 1830 G Leu 45 p Arg n Thr p Ala 1 Glu 1910 a Phe	1815 Leu Thr Met Ser Pro 1895 Val	Glu Glu Lys Asp 1880 Ser Arg	Gly Asp Val 1865 Leu Arg Asp	Gly Lys 1850 Ala Gly Lys Gln Arg 1930 Gln	Asn 1835 Lys Gln Asn Lys Leu 1915 Arg	1820 Thr Ser Gln Lys Ala 1900 Leu Glu	Thr Glu Glu Lys 1885 Lys Glu Glu	Ile Lys Ile 1870 Lys Glu Ala Asp	Phe 1855 Lys Asp Pro Ser Pro 1935 Lys	His 1840 Phe Ala Asp Thr Ala 1920 Asp
1810 Leu Leu Ala 1825 Ser Phe Phe Lys Val Phe Thr Val Thr 187 Glu Val Asp 1890 Thr Gln Ile 1905 Ala Thr Arg Asp His Tyr Lys Asp Asp	Cys Arg 1860 Val As: Arg As: Thr Gl Lys Al: 19 Gln Se 1940 Leu Gl:	A Leu 1830 G Leu 45 D Arg D Thr D Ala 1910 A Phe 25 r Gly	1815 Leu Thr Met Ser Pro 1895 Val O Thr	Glu Glu Lys Asp 1880 Ser Arg Thr Gly	Asp Val 1865 Leu Arg Asp Phe Thr 1945 Val	Gly Lys 1850 Ala Gly Lys Gln Arg 1930 Gln	Asn 1835 Lys Gln Asn Lys Leu 1915 Arg	1820 Thr Ser Gln Lys Ala 1900 Leu Glu	Thr Glu Glu Lys 1885 Lys Glu Ala Thr	Ile Lys Ile 1870 Lys Glu Ala Asp Asp 1950 Gln	Phe 1855 Lys Asp Pro Ser Pro 1935 Lys	His 1840 Phe Ala Asp Thr Ala 1920 Asp
1810 Leu Leu Ala 1825 Ser Phe Phe Lys Val Phe Thr Val Thr 187 Glu Val Asp 1890 Thr Gln Ile 1905 Ala Thr Arg Asp His Tyr Lys Asp Asp 195 Leu Arg Phe	Cys Arg 18. Tyr As; 1860 Val As: Arg As; Thr Gl Lys Al; 19 Gln Se 1940 Leu Gl	A Leu 1830 G Leu 15 D Arg D Thr D Ala 1 Glu 1910 A Phe 25 r Gly u Met	1815 Leu Thr Met Ser Pro 1895 Val Thr Glu Ser Leu	Glu Glu Lys Asp 1880 Ser Arg Thr Gly Ala 1960 Cys	Asp Val 1865 Leu Arg Asp Phe Thr 1945 Val	Gly Lys 1850 Ala Gly Lys Gln Arg 1930 Gln Ile	Asn 1835 Lys Gln Asn Lys Leu 1915 Arg Arg	1820 Thr Ser Gln Lys Ala 1900 Leu Glu Thr Ile Asn	Thr Glu Glu Lys 1885 Lys Glu Ala Thr Met 1965 Arg	Lys Ile 1870 Lys Glu Ala Asp 1950 Gln	Phe 1855 Lys Asp Pro Ser Pro 1935 Lys	His 1840 Phe Ala Asp Thr Ala 1920 Asp Ala
Leu Leu Ala 1825 Ser Phe Phe Lys Val Phe Thr Val Thr 187 Glu Val Asp 1890 Thr Gln Ile 1905 Ala Thr Arg Asp His Tyr Lys Asp Asp 195 Leu Arg Phe 1970 Asn Phe Leu	Cys Arg 1860 Val Ass Arg Ass Thr Gl Lys Als 19 Gln Se 1940 Leu Gl 5	A Leu 1830 G Leu 45 D Arg D Arg D Ala 1 Glu 1910 A Phe 25 r Gly U Met D Leu S Gln	1815 Leu Thr Met Ser Pro 1895 Val Thr Glu Ser Leu 1975 Asn	Glu Glu Lys Asp 1880 Ser Arg Thr Gly Ala 1960 Cys	Asp Val 1865 Leu Arg Asp Phe Thr 1945 Val	Gly Lys 1850 Ala Gly Lys Gln Arg 1930 Gln Ile Asn	Asn 1835 Lys Gln Asn Lys Leu 1915 Arg Ala Thr His	1820 Thr Ser Gln Lys Ala 1900 Leu Glu Thr Ile Asn 1980 Tyr	Thr Glu Glu Lys 1885 Lys Glu Ala Thr Met 1965 Arg	Lys Ile 1870 Lys Glu Ala Asp 1950 Gln Asp	Phe 1855 Lys Asp Pro Ser Pro 1935 Lys Pro	His 1840 Phe Ala Asp Thr Ala 1920 Asp Ala Ile Gln
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1810 Leu Leu Ala 1825 Ser Phe Phe Lys Val Phe Thr Val Thr 187 Glu Val Asp 1890 Thr Gln Ile 1905 Ala Thr Arg Asp His Tyr Lys Asp Asp 195 Leu Arg Phe 1970 Asn Phe Leu 1985	Ile Ala Cys Arg 183 Tyr Asg 1860 Val Asg Arg Asg Thr Gl Lys Ala 19 Gln Se 1940 Leu Gl Leu Gl Arg Cy Gln Ph 20	A Leu 1830 1845 20 Arg 21 Thr 22 Ala 25 The 25 The 26 Ala 27 Ala 28 Ala 29 Ala 29 Ala 20 Ala 21 Ala 22 Ala 25 Ala 26 Ala 27 Ala 27 Ala 28 Ala 29 Ala 20 Ala 20 Ala 21 Ala 22 Ala 23 Ala 24 Ala 25 Ala 26 Ala 27 Ala 28 Ala 29 Ala 20 Ala 20 Ala 21 Ala 22 Ala 23 Ala 24 Ala 25 Ala 26 Ala 27 Ala 28 Ala 29 Ala 20 Ala	1815 Leu Thr Met Ser Pro 1895 Val Thr Glu Ser Leu 1975 Asn O Asp	Glu Glu Lys Asp 1880 Ser Arg Thr Gly Ala 1960 Cys Asn Cys	Asp Val 1865 Leu Arg Asp Phe Thr 1945 Val Glu Lys Ile	Gly Lys 1850 Ala Gly Lys Gln Arg 1930 Gln Ile Asn Thr Cys 2010 Glu	Asn 1835 Lys Gln Asn Lys Leu 1915 Arg Ala Thr His Asn 1995 Gly	1820 Thr Ser Gln Lys Ala 1900 Leu Glu Thr Ile Asn 1980 Tyr Ser	Thr Glu Glu Lys 1885 Lys Glu Ala Thr Met 1965 Arg Asn	Lys Ile 1870 Lys Glu Ala Asp 1950 Gln Asp Leu Thr	Phe 1855 Lys Asp Pro Ser Pro 1935 Lys Pro Leu Val Gly 2015	His 1840 Phe Ala Asp Thr Ala 1920 Asp Ala Ile Gln Cys 2000 Gly

Second S	Asn Gln Thr Let 2035	ı Glu Ser I	eu Thr G 2040	lu Tyr C		Gly Pro 2045	Cys His
Met Asp Leu Val Leu Glu Per Lys Asn Asn Ala Ser Lys Leu	2050	2	2055		2060		
2085 2096 2095	2065	2070		20	075		2080
Tyr Asn Met Arg Pro Lys Glu Leu Val Glu Val Ile Lyse Lys Ala Tyr 2115 Met Gln Gly Glu Val Glu Phe Glu Asp Gly Glu Asp Gly Glu Asp Gly 2130 Ala Ala Ser Pro Arg Asn Val Gly His Asn Ile Tyr Ile Leu Ala His 2145 Ala Ala Ser Pro Arg Asn Val Gly His Asn Ile Tyr Ile Leu Ala His 2145 Gln Leu Ala Arg His Asn Lys Glu Leu Gln Thr Met Leu Lys Pro Gly 2150 Gly Gln Val Asp Gly Asp Glu Asp Gly Glu Phe Tyr Ala Lys His Thr 2180 2160 Gly Gln Val Asp Gly Asp Glu Ala Leu Glu Phe Tyr Ala Lys His Thr 2180 Ala Gln Ile Glu Ile Val Arg Leu Asp Arg Thr Met Glu Gln Ile Val 2195 Ala Gln Ile Glu Ile Val Arg Leu Asp Arg Thr Met Glu Gln Ile Val 2195 Phe Pro Val Pro Ser Ile Cys Glu Phe Leu Thr Lys Glu Ser Lys Leu 2210 Arg Ile Tyr Tyr Thr Thr Glu Arg Asp Glu Gln Gly Ser Lys Leu 2215 Arg Ile Tyr Tyr Thr Thr Glu Arg Asp Glu Gln Gly Ser Lys Ile Asn 2245 Asp Phe Phe Leu Arg Ser Glu Asp Leu Tyr Trp Cys Ala Arg Asn Met 2226 Ser Phe Trp Ser Ser Ile Ser Phe Asn Leu Ala Val Leu Met Asn Icu 2275 Leu Val Ala Phe Phe Tyr Pro Phe Lys Gly Val Arg Gly Gly Thr Leu 2200 Glu Pro His Trp Ser Gly Leu Leu Trp Thr Ala Met Leu Met Asn Leu 2205 Ala Ser Thr Ile Eu Arg Leu Ile Phe Ser Val Gly Ile Arg Ala Leu Ile 2325 Ala Ser Thr Ile Eu Arg Leu Ile Phe Ser Val Gly Leu Gln Pro Thr 2340 Ala Ser Thr Ile Eu Arg Leu Ile Phe Ser Val Gly Leu Gln Pro Thr 2340 Ala Ser Thr Ile Eu Arg Leu Ile Phe Ser Val Gly Leu Gln Pro Thr 2340 Ala Ser Thr Ile Eu Ash Cys Gly Thr Phe Try For Phe Lys Ash Leu Ile 2325 Met Val Leu Asp Val Glu Phe Leu Try Thr Phe Try For Phe Lys Ash Leu Ile Phe Leu 2365 Met Ser Phe Val Gly Ala Phe Asn Val Cys Asn Lys Ile Ile Phe Leu 2435 Met Val Leu Asp Val Glu Phe Leu Try His Leu Leu Try Leu Leu Ile 2385 Met Val Leu Asp Val Glu Phe Leu Try His Leu Leu Try Leu Leu Ile 2385 Met Val Leu Asp Val Glu Phe Val His Glu Phe Phe Try Ser Leu Leu Leu 2435 Met Val Leu Asp Val Glu Ash Cys Gly Thr Pe Thr Ala Ala Leu Ala Leu Leu 2435 Ala Ser Phe Val Gly Asn Cys Gly Thr Pe Thr Ala Ala Leu Ala Leu Leu 2435 Met Val Leu Asp Val Glu Glu Thr Leu Leu Try Leu Le	Met Asp Leu Val		Leu Lys A		la Ser I		
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Gln Leu Ala Arg His Asn Lys Glu Leu Gln Thr Met Leu Lys Pro Gly 2165 Gly Gln Val Asp Gly Asp Glu Ala Leu Glu Phe Tyr Ala Lys His Thr 2180 Ala Gln Ile Glu Ile Val Arg Leu Asp Arg Thr Met Glu Gln Ile Val 2295 Phe Pro Val Pro Ser Ile Cys Glu Phe Leu Thr Lys Glu Ser Lys Leu 2210 Arg Ile Tyr Tyr Thr Thr Glu Arg Asp Glu Gln Gly Ser Lys Leu 2225 Asp Phe Phe Leu Arg Ser Glu Asp Leu Asp Glu Gln Gly Ser Lys Ile Asn 2225 Lys Lys Leu Arg Ala Gln Pro Val Leu Tyr Trp Cys Ala Arg Asn Met 2250 Ser Phe Trp Ser Ser Ile Ser Phe Asn Glu Met Asn Trp Gln 2275 Ser Phe Trp Ser Ser Ile Ser Phe Asn Leu Ala Val Leu Met Asn Leu 2270 Glu Pro His Trp Ser Gly Leu Leu Trp Thr Ala Met Leu Ile Ser Leu 2200 Ala Ile Val Ile Ala Leu Pro Lys Pro His Gly Ile Arg Ala Leu Ile 2305 Ala Ser Thr Ile Leu Arg Leu Ile Phe Ser Val Gly Leu Gln Pro Thr 2340 Leu Phe Leu Leu Gly Ala Phe Asn Val Cys Asn Lys Ile Ile Phe Leu 2370 Met Val Leu Asp Val Glu Phe Leu Tyr His Leu Leu Tyr Arg Ala 2370 Met Val Leu Asp Val Glu Phe Leu Tyr His Leu Leu Tyr Arg Ala 2370 Cys Ala Met Gly Leu Phe Val His Glu Phe Tyr Ser Leu Leu Ile 2385 Met Ser Phe Val Gly Asn Cys Gly Thr Phe Thr Arg Gly Tyr Arg Ala 2370 Cys Ala Met Gly Leu Phe Val His Glu Phe Phe Tyr Ser Leu Leu Ile 2385 Ala Ser Thr Ile Leu Asp Leu Glu Phe Leu Tyr His Leu Leu Tyr Leu Leu Ile 2385 Met Val Leu Asp Val Glu Phe Leu Tyr His Leu Leu Tyr Leu Leu Ile 2385 Ala Ser Phe Val Gly Asn Cys Gly Thr Phe Thr Arg Gly Tyr Arg Ala 2370 Met Val Leu Asp Val Glu Phe Leu Tyr His Leu Leu Tyr Leu Leu Leu Leu 2405 Phe Asp Leu Val Tyr Arg Glu Glu Thr Leu Leu Asn Val Ile Lys Ser 2420 Ala Met Gly Leu Phe Val His Glu Phe Phe Tyr Ser Leu Leu Leu 2415 Phe Asp Leu Val Tyr Arg Glu Glu Thr Leu Leu Asn Val Ile Lys Ser 2420 Asp Phe Ile Leu Glu Val Asp Arg Leu Pro Asn Glu Thr Ala Gly Pro 2450 Asp Phe Ile Leu Glu Val Asp Arg Leu Pro Asn Glu Thr Ala Gly Pro 2455 Asp Phe Ile Leu Glu Val Asp Arg Leu Pro Asn Glu Thr Ala Gly Pro 2455 Arg Val Glu Thr Gly Glu Ser Leu Asn Asp Phe Leu Tyr Ser Asp Val Cys 2495			/al Gly H			lle Leu	
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The color of the	2225	2230		2	235		2240
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Carrell	2275		2280			2285	
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Leu Phe Leu Leu Gly Ala Phe Asn Val Cys Asn Lys Ile Ile Phe Leu 2355 Met Ser Phe Val Gly Asn Cys Gly Thr Phe Thr Arg Gly Tyr Arg Ala 2370 Met Val Leu Asp Val Glu Phe Leu Tyr His Leu Leu Tyr Leu Leu Ile 2385 Met Val Leu Asp Val Glu Phe Leu Tyr His Leu Leu Tyr Leu Leu Ile 2385 Met Val Leu Asp Val Glu Phe Val His Glu Phe Phe Tyr Ser Leu Leu Leu 2405 Phe Asp Leu Val Tyr Arg Glu Glu Thr Leu Leu Asn Val Ile Leu Leu 2415 Phe Asp Leu Val Tyr Arg Glu Glu Thr Leu Leu Asn Val Ile Leu Ser 2420 Val Thr Arg Asn Gly Arg Pro Ile Ile Leu Thr Ala Ala Leu Ala Leu 2435 Ile Leu Val Tyr Leu Phe Ser Ile Val Gly Tyr Leu Phe Phe Phe Lys Asp 2450 Asp Phe Ile Leu Glu Val Asp Arg Leu Pro Asn Glu Thr Ala Gly Pro 2465 Arg Val Glu Thr Gly Glu Ser Leu Ala Asn Asp Phe Leu Tyr Ser Asp Val Cys 2485 Arg Val Glu Thr Gly Glu Asn Cys Thr Ser Pro Ala Pro Lys Glu Glu Glu		2325	_	2330			2335
Met Ser Phe Val Gly Asn Cys Gly Thr Phe Thr Arg Gly Tyr Arg Ala 2370	23	10	2	345		2350)
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Glu Thr Gly Glu Ser Leu Ala Asn Asp Phe Leu Tyr Ser Asp Val Cys 2485 2490 2495 Arg Val Glu Thr Gly Glu Asn Cys Thr Ser Pro Ala Pro Lys Glu Glu	Phe Asp Leu Val 24: Val Thr Arg As: 2435 Ile Leu Val Ty	2405 1 Tyr Arg (20 n Gly Arg 1 r Leu Phe 9	Glu Glu T 2 Pro Ile I 2440 Ser Ile V	2410 Thr Leu L 2425 Ile Leu T	eu Asn hr Ala yr Leu	Val Ile 2430 Ala Leu 2445	2415 Lys Ser) Ala Leu
2485 2490 2495 Arg Val Glu Thr Gly Glu Asn Cys Thr Ser Pro Ala Pro Lys Glu Glu	Phe Asp Leu Va 24: Val Thr Arg As: 2435 Ile Leu Val Ty 2450 Asp Phe Ile Le	2405 l Tyr Arg (20 n Gly Arg l r Leu Phe S u Glu Val A	Glu Glu T 2 Pro Ile I 2440 Ser Ile V	2410 Thr Leu L 2425 Ile Leu T Val Gly T	eu Asn hr Ala yr Leu 2460 sn Glu	Val Ile 2430 Ala Leu 2445 Phe Phe	Lys Ser Ala Leu Lys Asp Gly Pro
	Phe Asp Leu Va 24: Val Thr Arg As: 2435 Ile Leu Val Ty 2450 Asp Phe Ile Le: 2465	2405 l Tyr Arg (20 n Gly Arg l r Leu Phe S 2 u Glu Val A 2470	Glu Glu T 2 Pro Ile I 2440 Ser Ile V 2455 Asp Arg I	2410 Thr Leu L 2425 Ile Leu T Val Gly T Leu Pro A	eu Asn hr Ala yr Leu 2460 sn Glu	Val Ile 2430 Ala Leu 2445 Phe Phe Thr Ala	2415 Lys Ser Ala Leu Lys Asp Gly Pro 2480
	Phe Asp Leu Va 24: Val Thr Arg As: 2435 Ile Leu Val Ty 2450 Asp Phe Ile Le: 2465 Glu Thr Gly Gl	2405 1 Tyr Arg (200 n Gly Arg 1 r Leu Phe S u Glu Val 2 2470 u Ser Leu 2 2485	Glu Glu T 2 Pro Ile I 2440 Ser Ile V 2455 Asp Arg I	2410 Thr Leu L 2425 The Leu T Val Gly T Leu Pro A 2 Asp Phe L 2490	eu Asn hr Ala yr Leu 2460 sn Glu 475 eu Tyr	Val Ile 2430 Ala Leu 2445 Phe Phe Thr Ala Ser Asp	2415 Lys Ser Ala Leu Lys Asp Gly Pro 2480 Val Cys 2495

Leu Leu Pro Val Glu Glu Thr Glu Gln Asp Lys Glu His Thr Cys Glu 2520 Thr Leu Leu Met Cys Ile Val Thr Val Leu Ser His Gly Leu Arg Ser 2535 2540 Gly Gly Gly Val Gly Asp Val Leu Arg Lys Pro Ser Lys Glu Glu Pro 2550 2555 Leu Phe Ala Ala Arg Val Ile Tyr Asp Leu Leu Phe Phe Phe Met Val 2570 2565 Ile Ile Ile Val Leu Asn Leu Ile Phe Gly Val Ile Ile Asp Thr Phe 2585 Ala Asp Leu Arg Ser Glu Lys Gln Lys Lys Glu Glu Ile Leu Lys Thr 2600 Thr Cys Phe Ile Cys Gly Leu Glu Arg Asp Lys Phe Asp Asn Lys Thr 2615 2620 Val Thr Phe Glu Glu His Ile Lys Glu Glu His Asn Met Trp His Tyr 2630 2635 Leu Cys Phe Ile Val Leu Val Lys Val Lys Asp Ser Thr Glu Tyr Thr 2645 2650 Gly Pro Glu Ser Tyr Val Ala Glu Met Ile Arg Glu Arg Asn Leu Asp 2660 2665 Trp Phe Pro Arg Met Arg Ala Met Ser Leu Val Ser Ser Asp Ser Glu 2680 2685 2675 Gly Glu Gln Asn Glu Leu Arg Asn Leu Gln Glu Lys Leu Glu Ser Thr 2695 2700 Met Lys Leu Val Thr Asn Leu Ser Gly Gln Leu Ser Glu Leu Lys Asp 2705 2710 2715 Gln Met Thr Glu Gln Arg Lys Gln Lys Gln Arg Ile Gly Leu Leu Gly 2725 2730 His Pro Pro His Met Asn Val Asn Pro Gln Gln Pro Ala 2740 2745

<210> 9

<211> 2710

<212> PRT

<213> Artificial Sequence

<220>

<400> 9

Met Ser Asp Lys Met Ser Ser Phe Leu His Ile Gly Asp Ile Cys Ser 5 10 Leu Tyr Ala Glu Gly Ser Thr Asn Gly Phe Ile Ser Thr Leu Gly Leu 20 25 Val Asp Asp Arg Cys Val Val Gln Pro Glu Ala Gly Asp Leu Asn Asn 40 45 Pro Pro Lys Lys Phe Arg Asp Cys Leu Phe Lys Leu Cys Pro Met Asn 55 Arg Tyr Ser Ala Gln Lys Gln Phe Trp Lys Ala Ala Lys Pro Gly Ala 75 70 Asn Ser Thr Thr Asp Ala Val Leu Leu Asn Lys Leu His His Ala Ala Asp Leu Glu Lys Lys Gln Asn Glu Thr Glu Asn Arg Lys Leu Leu Gly 105 Thr Val Ile Gln Tyr Gly Asn Val Ile Gln Leu Leu His Leu Lys Ser 120 Asn Lys Tyr Leu Thr Val Asn Lys Arg Leu Pro Ala Leu Leu Glu Lys 135 140 130

Asn 145	Ala	Met	Arg	Val	Thr 150	Leu	Asp	Glu	Ala	Gly 155	Asn	Glu	Gly	Ser	Trp 160
Phe	Tyr	Ile	Gln	Pro 165	Phe	Tyr	Lys	Leu	Arg 170	Ser	Ile	Gly	Asp	Ser 175	Val
			Asp 180					185					190		
		195	Ser				200		_			205	_		
	210		Val			215					220				
225			Asp		230					235					240
			His	245					250			_		255	
		_	Gln 260					265				_	270		
		275	Thr				280					285			
	290		Cys			295		_	_	-	300				
305			Glu		310					315					320
			Ser	325	_				330				_	335	
			340 Val	_				345					350		
		355	Pro				360					365			
	370		Val			375	_	_		_	380				_
		-1-	val	9		A- 9	1110	псα	C 7 5		11011	1111	115	var	
385 Ser	Thr	Δsn	Tle	Pro	390 Tle	Δen	Tive	Glu	Glu	395	Tave	Pro	Val	Met	400
Ser			Ile	405	Ile				410	Glu				415	Leu
Ser Lys	Ile	Gly	Thr 420	405 Ser	Ile Pro	Leu	Lys	Glu 425	410 Asp	Glu Lys	Glu	Ala	Phe 430	415 Ala	Leu Ile
Ser Lys Val	Ile Pro	Gly Val 435	Thr 420 Ser	405 Ser Pro	Ile Pro Ala	Leu Glu	Lys Val 440	Glu 425 Arg	410 Asp Asp	Glu Lys Leu	Glu Asp	Ala Phe 445	Phe 430 Ala	415 Ala Asn	Leu Ile Asp
Ser Lys Val Ala	Ile Pro Ser 450	Gly Val 435 Lys	Thr 420 Ser Val	405 Ser Pro Leu	Ile Pro Ala Gly	Leu Glu Ser 455	Lys Val 440 Ile	Glu 425 Arg Ala	410 Asp Asp Gly	Glu Lys Leu Lys	Glu Asp Leu 460	Ala Phe 445 Glu	Phe 430 Ala Lys	415 Ala Asn Gly	Leu Ile Asp Thr
Ser Lys Val Ala Ile 465	Ile Pro Ser 450 Thr	Gly Val 435 Lys Gln	Thr 420 Ser Val Asn	405 Ser Pro Leu Glu	Ile Pro Ala Gly Arg 470	Leu Glu Ser 455 Arg	Lys Val 440 Ile Ser	Glu 425 Arg Ala Val	410 Asp Asp Gly Thr	Glu Lys Leu Lys 475	Glu Asp Leu 460 Leu	Ala Phe 445 Glu Leu	Phe 430 Ala Lys Glu	415 Ala Asn Gly Asp	Leu Asp Thr Leu 480
Ser Lys Val Ala Ile 465 Val	Ile Pro Ser 450 Thr	Gly Val 435 Lys Gln Phe	Thr 420 Ser Val Asn Val	405 Ser Pro Leu Glu Thr 485	Ile Pro Ala Gly Arg 470 Gly	Leu Glu Ser 455 Arg	Lys Val 440 Ile Ser Thr	Glu 425 Arg Ala Val Asn	410 Asp Asp Gly Thr Ser 490	Glu Lys Leu Lys Lys 475 Gly	Glu Asp Leu 460 Leu Gln	Ala Phe 445 Glu Leu Asp	Phe 430 Ala Lys Glu Val	415 Ala Asn Gly Asp Leu 495	Leu Ile Asp Thr Leu 480 Glu
Ser Lys Val Ala Ile 465 Val	Ile Pro Ser 450 Thr Tyr	Gly Val 435 Lys Gln Phe	Thr 420 Ser Val Asn Val Ser 500	405 Ser Pro Leu Glu Thr 485 Lys	Ile Pro Ala Gly Arg 470 Gly	Leu Glu Ser 455 Arg Gly Asn	Lys Val 440 Ile Ser Thr	Glu 425 Arg Ala Val Asn Glu 505	Asp Asp Gly Thr Ser 490 Arg	Glu Lys Leu Lys Lys 475 Gly Gln	Glu Asp Leu 460 Leu Gln Lys	Ala Phe 445 Glu Leu Asp Leu	Phe 430 Ala Lys Glu Val Met 510	Ala Asn Gly Asp Leu 495 Arg	Leu Ile Asp Thr Leu 480 Glu Glu
Ser Lys Val Ala Ile 465 Val Val Gln	Ile Pro Ser 450 Thr Tyr Val	Gly Val 435 Lys Gln Phe Phe Ile 515	Thr 420 Ser Val Asn Val Ser 500 Leu	405 Ser Pro Leu Glu Thr 485 Lys	Pro Ala Gly Arg 470 Gly Pro Gln	Leu Glu Ser 455 Arg Gly Asn Ile	Lys Val 440 Ile Ser Thr Arg Phe 520	Glu 425 Arg Ala Val Asn Glu 505 Lys	Asp Asp Gly Thr Ser 490 Arg Leu	Glu Lys Leu Lys 475 Gly Gln Leu	Glu Asp Leu 460 Leu Gln Lys Gln	Ala Phe 445 Glu Leu Asp Leu Ala 525	Phe 430 Ala Lys Glu Val Met 510 Pro	Asn Gly Asp Leu 495 Arg	Leu Ile Asp Thr Leu 480 Glu Glu Thr
Ser Lys Val Ala Ile 465 Val Val Gln Asp	Ile Pro Ser 450 Thr Tyr Val Asn Cys 530	Gly Val 435 Lys Gln Phe Phe Ile 515 Gly	Thr 420 Ser Val Asn Val Ser 500 Leu Asp	405 Ser Pro Leu Glu Thr 485 Lys Lys	Pro Ala Gly Arg 470 Gly Pro Gln Pro	Leu Glu Ser 455 Arg Gly Asn Ile Met 535	Lys Val 440 Ile Ser Thr Arg Phe 520 Leu	Glu 425 Arg Ala Val Asn Glu 505 Lys	Asp Asp Gly Thr Ser 490 Arg Leu	Glu Lys Leu Lys 475 Gly Gln Leu Glu	Glu Asp Leu 460 Leu Gln Lys Gln Glu 540	Ala Phe 445 Glu Leu Asp Leu Ala 525 Leu	Phe 430 Ala Lys Glu Val Met 510 Pro	Asn Gly Asp Leu 495 Arg Phe Asp	Leu Ile Asp Thr Leu 480 Glu Glu Thr
Lys Val Ala Ile 465 Val Val Gln Asp Arg 545	Ile Pro Ser 450 Thr Tyr Val Asn Cys 530 His	Gly Val 435 Lys Gln Phe Phe Ile 515 Gly Ala	Thr 420 Ser Val Asn Val Ser 500 Leu Asp	405 Ser Pro Leu Glu Thr 485 Lys Lys Gly Phe	Ile Pro Ala Gly Arg 470 Gly Pro Gln Pro Arg 550	Leu Glu Ser 455 Arg Gly Asn Ile Met 535 His	Lys Val 440 Ile Ser Thr Arg Phe 520 Leu Ile	Glu 425 Arg Ala Val Asn Glu 505 Lys Arg Cys	Asp Asp Gly Thr Ser 490 Arg Leu Leu	Glu Lys Lys 475 Gly Gln Leu Glu Leu 555	Glu Asp Leu 460 Leu Gln Lys Gln Glu 540 Cys	Ala Phe 445 Glu Leu Asp Leu Ala 525 Leu Tyr	Phe 430 Ala Lys Glu Val Met 510 Pro Gly Arg	Asn Gly Asp Leu 495 Arg Phe Asp	Leu Asp Thr Leu 480 Glu Glu Thr Gln Leu 560
Lys Val Ala Ile 465 Val Val Gln Asp Arg 545 Arg	Ile Pro Ser 450 Thr Tyr Val Asn Cys 530 His	Gly Val 435 Lys Gln Phe Phe Ile 515 Gly Ala Ser	Thr 420 Ser Val Asn Val Ser 500 Leu Asp Pro	405 Ser Pro Leu Glu Thr 485 Lys Gly Phe Gln 565	Ile Pro Ala Gly Arg 470 Gly Pro Gln Pro Arg 550 Asp	Leu Glu Ser 455 Arg Gly Asn Ile Met 535 His	Lys Val 440 Ile Ser Thr Arg Phe 520 Leu Ile Arg	Glu 425 Arg Ala Val Asn Glu 505 Lys Arg Cys	Asp Gly Thr Ser 490 Arg Leu Leu Arg Asn 570	Glu Lys Lys 475 Gly Gln Leu Glu Leu 555 Gln	Glu Asp Leu 460 Leu Gln Lys Gln Glu 540 Cys	Ala Phe 445 Glu Leu Asp Leu Ala 525 Leu Tyr	Phe 430 Ala Lys Glu Val Met 510 Pro Gly Arg	Asn Gly Asp Leu 495 Arg Phe Asp Val Ala 575	Leu Ile Asp Thr Leu 480 Glu Glu Thr Gln Leu 560 Lys
Ser Lys Val Ala Ile 465 Val Val Gln Asp Arg 545 Arg	Ile Pro Ser 450 Thr Tyr Val Asn Cys 530 His His	Gly Val 435 Lys Gln Phe Phe Ile 515 Gly Ala Ser Gly	Thr 420 Ser Val Asn Val Ser 500 Leu Asp Pro Gln Phe 580	405 Ser Pro Leu Glu Thr 485 Lys Gly Phe Gln 565 Met	Ile Pro Ala Gly Arg 470 Gly Pro Gln Pro Arg 550 Asp Gln	Leu Glu Ser 455 Arg Gly Asn Ile Met 535 His Tyr Lys	Lys Val 440 Ile Ser Thr Arg Phe 520 Leu Ile Arg Gln	Glu 425 Arg Ala Val Asn Glu 505 Lys Arg Cys Lys	Asp Gly Thr Ser 490 Arg Leu Leu Arg Asn 570 Gly	Glu Lys Lys 475 Gly Gln Leu Glu Leu 555 Gln Tyr	Glu Asp Leu 460 Leu Gln Lys Gln Glu 540 Cys Glu Asp	Ala Phe 445 Glu Leu Asp Leu Ala 525 Leu Tyr Tyr	Phe 430 Ala Lys Glu Val Met 510 Pro Gly Arg Ile Leu 590	Asn Gly Asp Leu 495 Arg Phe Asp Val Ala 575 Ala	Leu Asp Thr Leu 480 Glu Glu Thr Gln Leu 560 Lys Glu
Ser Lys Val Ala Ile 465 Val Val Gln Asp Arg 545 Arg Gln Asp	Ile Pro Ser 450 Thr Tyr Val Asn Cys 530 His His Phe Thr	Gly Val 435 Lys Gln Phe Phe Ile 515 Gly Ala Ser Gly Ile 595	Thr 420 Ser Val Asn Val Ser 500 Leu Asp Pro Gln Phe	405 Ser Pro Leu Glu Thr 485 Lys Gly Phe Gln 565 Met	Ile Pro Ala Gly Arg 470 Gly Pro Gln Pro Arg 550 Asp Gln Leu	Leu Glu Ser 455 Arg Gly Asn Ile Met 535 His Tyr Lys Leu	Lys Val 440 Ile Ser Thr Arg Phe 520 Leu Ile Arg Gln His 600	Glu 425 Arg Ala Val Asn Glu 505 Lys Arg Cys Lys Ile 585 Asn	Asp Asp Gly Thr Ser 490 Arg Leu Arg Asn 570 Gly Asn	Glu Lys Lys 475 Gly Gln Leu Glu Leu 555 Gln Tyr	Glu Asp Leu 460 Leu Gln Lys Gln Glu 540 Cys Glu Asp Lys	Ala Phe 445 Glu Leu Asp Leu Ala 525 Leu Tyr Tyr Val Leu 605	Phe 430 Ala Lys Glu Val Met 510 Pro Gly Arg Ile Leu 590 Leu	Asn Gly Asp Leu 495 Arg Phe Asp Val Ala 575 Ala Glu	Leu Asp Thr Leu 480 Glu Glu Thr Gln Leu 560 Lys Glu Lys

Asn															
	Arg	Glu	Pro	Arg		Leu	Asp	Tyr	Leu		Asp	Leu	Cys	Val	
625					630					635					640
Met	Asn	Lys	Ser	Ile 645	Pro	Val	Thr	Gln	Glu 650	Leu	Ile	Cys	Lys	Ala 655	Val
Leu	Asn	Pro	Thr	Asn	Ala	Asp	Ile	Leu	Tle	Glu	Thr	Lvs	Leu	Val	Leu
Dou			660					665				-1-	670		
•		m 1		D1	~ 7	~ 1	**- 7			~ 1	~1	7		T	01
ser	Arg		GIU	Pne	GIU	GIY		ser	Thr	GIY	GIU	685	Ата	Leu	GIU
_		675	_				680	_	_		_		_	_	_
Ala	Gly	Glu	Asp	Glu	Glu	Glu	Val	\mathtt{Trp}	Leu	Phe	Trp	Arg	Asp	Ser	Asn
	690					695					700				
Lvs	Glu	Ile	Ara	Ser	Lvs	Ser	Val	Ara	Glu	Leu	Ala	Gln	Asp	Ala	Lvs
705					710					715			-		720
	~ 3	~ 1	.	0 1		7	3	77-7	T		m	m	7	m	
GIU	GIA	GIII	гуѕ		Asp	Arg	Asp	vaı		ser	IYL	тЪг	Arg	Tyr	GIII
				725					730					735	
Leu	Asn	Leu	Phe	Ala	Arg	Met	Cys	Leu	Asp	Arg	Gln	Tyr	Leu	Ala	Ile
			740					745					750		
Aen	Glu	Tle	_	Clv	Gln	T.e.11	Agn		Asn	T.e11	Tle	T.e.ii	Ara	Cys	Met
71511	OIG		DCL	O.L.y	O111		760	, u	rrop	~		765	*** 9	- 10	
_	_	755	_	_	_	_		_	_		_		~	_	-
Ser	Asp	GIu	Asn	Leu	Pro	_	Asp	Leu	Arg	Ala		Pne	Cys	Arg	Leu
	770					775					780				
Met	Leu	His	Met	His	Val	Asp	Arg	Asp	Pro	Gln	Glu	Gln	Val	Thr	Pro
785					790	_	_			795					800
	Laze	Туг	Λla	λνα		Trn	Ser	Glu	Tle		Ser	Glu	Tle	Ala	
VUI	цур	- y -	nia		ЦСи	11.12	DCI	Oru		110		O.L.	110	815	
_	_	_	_	805				_	810	_0			_		_
Asp	Asp	Tyr	Asp	Ser	Ser	Gly	Ala	Ser	Lys	Asp	Glu	Ile	Lys	Glu	Arg
			820					825					830		
Phe	Ala	Gln	Thr	Met	Glu	Phe	Val	Glu	Glu	Tyr	Leu	Arq	Asp	Val	Val
		835					840			-		845	•		
Cvc	01 n		Dho	Dro	Dhe	Sar		Lare	Glu	Tare	λan		T.em	Thr	Dhe
Cys		Arg	FIIC	PIO	FIIC		Asp	цуз	Gru	цуз		цуз	пси	1111	FIIC
_	850	_				855		_			860			_	_
C_{111}	Val	Val	Asn	Leu	Ala	Arq	Asn	Leu	Ile	Tyr	Phe	Gly	Phe	Tyr	Asn
Giu										-		_		_	
865					870					875		_		_	880
865					870					875					880
865				Leu	870				Ile	875				Leu 895	880
865 Phe	Ser	Asp	Leu	Leu 885	870 Arg	Leu	Thr	Lys	Ile 890	875 Leu	Leu	Ala	Ile	Leu 895	880 Asp
865 Phe	Ser	Asp	Leu Val	Leu 885	870 Arg	Leu	Thr	Lys Pro	Ile 890	875 Leu	Leu	Ala	Ile Thr	Leu	880 Asp
865 Phe Cys	Ser Val	Asp His	Leu Val 900	Leu 885 Thr	870 Arg Thr	Leu Ile	Thr Phe	Lys Pro 905	Ile 890 Ile	875 Leu Ser	Leu Lys	Ala Met	Ile Thr 910	Leu 895 Lys	880 Asp Gly
865 Phe Cys	Ser Val	Asp His	Leu Val 900	Leu 885 Thr	870 Arg Thr	Leu Ile	Thr Phe Val	Lys Pro 905	Ile 890 Ile	875 Leu Ser	Leu Lys	Ala Met His	Ile Thr 910	Leu 895	880 Asp Gly
865 Phe Cys Glu	Ser Val Glu	Asp His Asn 915	Leu Val 900 Lys	Leu 885 Thr	870 Arg Thr Ser	Leu Ile Asn	Thr Phe Val 920	Lys Pro 905 Met	Ile 890 Ile Arg	875 Leu Ser Ser	Leu Lys Ile	Ala Met His 925	Ile Thr 910 Gly	Leu 895 Lys Val	880 Asp Gly Gly
865 Phe Cys Glu	Ser Val Glu	Asp His Asn 915	Leu Val 900 Lys	Leu 885 Thr	870 Arg Thr Ser	Leu Ile Asn	Thr Phe Val 920	Lys Pro 905 Met	Ile 890 Ile Arg	875 Leu Ser Ser	Leu Lys Ile	Ala Met His 925	Ile Thr 910 Gly	Leu 895 Lys	880 Asp Gly Gly
865 Phe Cys Glu	Ser Val Glu Leu	Asp His Asn 915	Leu Val 900 Lys	Leu 885 Thr	870 Arg Thr Ser	Leu Ile Asn Val	Thr Phe Val 920	Lys Pro 905 Met	Ile 890 Ile Arg	875 Leu Ser Ser	Leu Lys Ile	Ala Met His 925	Ile Thr 910 Gly	Leu 895 Lys Val	880 Asp Gly Gly
865 Phe Cys Glu Glu	Ser Val Glu Leu 930	Asp His Asn 915 Met	Leu Val 900 Lys Thr	Leu 885 Thr Gly Gln	870 Arg Thr Ser Val	Leu Ile Asn Val 935	Thr Phe Val 920 Leu	Lys Pro 905 Met Arg	Ile 890 Ile Arg Gly	875 Leu Ser Ser Gly	Leu Lys Ile Gly 940	Ala Met His 925 Phe	Thr 910 Gly Leu	Leu 895 Lys Val Pro	880 Asp Gly Gly Met
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865 Phe Cys Glu Glu Thr 945	Ser Val Glu Leu 930 Pro	Asp His Asn 915 Met	Leu Val 900 Lys Thr	Leu 885 Thr Gly Gln Ala	870 Arg Thr Ser Val Ala 950	Leu Ile Asn Val 935 Pro	Thr Phe Val 920 Leu Glu	Lys Pro 905 Met Arg	Ile 890 Ile Arg Gly Asn	875 Leu Ser Ser Gly Val 955	Leu Lys Ile Gly 940 Lys	Ala Met His 925 Phe Gln	Thr 910 Gly Leu Ala	Leu 895 Lys Val Pro Glu	880 Asp Gly Gly Met Pro 960
865 Phe Cys Glu Glu Thr 945	Ser Val Glu Leu 930 Pro	Asp His Asn 915 Met	Leu Val 900 Lys Thr	Leu 885 Thr Gly Gln Ala Ile	870 Arg Thr Ser Val Ala 950	Leu Ile Asn Val 935 Pro	Thr Phe Val 920 Leu Glu	Lys Pro 905 Met Arg	Ile 890 Ile Arg Gly Asn Thr	875 Leu Ser Ser Gly Val 955	Leu Lys Ile Gly 940 Lys	Ala Met His 925 Phe Gln	Thr 910 Gly Leu Ala	Leu 895 Lys Val Pro Glu Ile	880 Asp Gly Gly Met Pro 960
865 Phe Cys Glu Glu Thr 945 Glu	Ser Val Glu Leu 930 Pro Lys	Asp His Asn 915 Met Met Glu	Leu Val 900 Lys Thr Ala Asp	Leu 885 Thr Gly Gln Ala Ile 965	870 Arg Thr Ser Val Ala 950 Met	Leu Ile Asn Val 935 Pro Val	Thr Phe Val 920 Leu Glu Met	Lys Pro 905 Met Arg Gly Asp	Ile 890 Ile Arg Gly Asn Thr 970	875 Leu Ser Ser Gly Val 955 Lys	Leu Lys Ile Gly 940 Lys Leu	Ala Met His 925 Phe Gln Lys	Thr 910 Gly Leu Ala Ile	Leu 895 Lys Val Pro Glu Ile 975	880 Asp Gly Gly Met Pro 960 Glu
865 Phe Cys Glu Glu Thr 945 Glu	Ser Val Glu Leu 930 Pro Lys	Asp His Asn 915 Met Met Glu	Leu Val 900 Lys Thr Ala Asp	Leu 885 Thr Gly Gln Ala Ile 965	870 Arg Thr Ser Val Ala 950 Met	Leu Ile Asn Val 935 Pro Val	Thr Phe Val 920 Leu Glu Met	Lys Pro 905 Met Arg Gly Asp	Ile 890 Ile Arg Gly Asn Thr 970	875 Leu Ser Ser Gly Val 955 Lys	Leu Lys Ile Gly 940 Lys Leu	Ala Met His 925 Phe Gln Lys	Thr 910 Gly Leu Ala Ile	Leu 895 Lys Val Pro Glu Ile	880 Asp Gly Gly Met Pro 960 Glu
865 Phe Cys Glu Glu Thr 945 Glu	Ser Val Glu Leu 930 Pro Lys	Asp His Asn 915 Met Met Glu	Leu Val 900 Lys Thr Ala Asp	Leu 885 Thr Gly Gln Ala Ile 965	870 Arg Thr Ser Val Ala 950 Met	Leu Ile Asn Val 935 Pro Val	Thr Phe Val 920 Leu Glu Met	Lys Pro 905 Met Arg Gly Asp	Ile 890 Ile Arg Gly Asn Thr 970	875 Leu Ser Ser Gly Val 955 Lys	Leu Lys Ile Gly 940 Lys Leu	Ala Met His 925 Phe Gln Lys	Thr 910 Gly Leu Ala Ile	Leu 895 Lys Val Pro Glu Ile 975	880 Asp Gly Gly Met Pro 960 Glu
865 Phe Cys Glu Glu Thr 945 Glu Ile	Ser Val Glu Leu 930 Pro Lys Leu	Asp His Asn 915 Met Met Glu Gln	Leu Val 900 Lys Thr Ala Asp Phe 980	Leu 885 Thr Gly Gln Ala Ile 965 Ile	870 Arg Thr Ser Val Ala 950 Met Leu	Leu Ile Asn Val 935 Pro Val Asn	Thr Phe Val 920 Leu Glu Met Val	Lys Pro 905 Met Arg Gly Asp Arg 985	Ile 890 Ile Arg Gly Asn Thr 970 Leu	875 Leu Ser Ser Gly Val 955 Lys	Leu Lys Ile Gly 940 Lys Leu Tyr	Ala Met His 925 Phe Gln Lys Arg	Thr 910 Gly Leu Ala Ile Ile 990	Leu 895 Lys Val Pro Glu Ile 975 Ser	880 Asp Gly Gly Met Pro 960 Glu Cys
865 Phe Cys Glu Glu Thr 945 Glu Ile	Ser Val Glu Leu 930 Pro Lys Leu	Asp His Asn 915 Met Met Glu Gln Cys	Leu Val 900 Lys Thr Ala Asp Phe 980	Leu 885 Thr Gly Gln Ala Ile 965 Ile	870 Arg Thr Ser Val Ala 950 Met Leu	Leu Ile Asn Val 935 Pro Val Asn	Thr Phe Val 920 Leu Glu Met Val Glu	Lys Pro 905 Met Arg Gly Asp Arg 985 Phe	Ile 890 Ile Arg Gly Asn Thr 970 Leu	875 Leu Ser Ser Gly Val 955 Lys	Leu Lys Ile Gly 940 Lys Leu Tyr	Ala Met His 925 Phe Gln Lys Arg	Thr 910 Gly Leu Ala Ile 11e 990 Ser	Leu 895 Lys Val Pro Glu Ile 975	880 Asp Gly Gly Met Pro 960 Glu Cys
865 Phe Cys Glu Glu Thr 945 Glu Ile Leu	Ser Val Glu Leu 930 Pro Lys Leu Leu	Asp His Asn 915 Met Glu Gln Cys 995	Leu Val 900 Lys Thr Ala Asp Phe 980 Ile	Leu 885 Thr Gly Gln Ala Ile 965 Ile	870 Arg Thr Ser Val Ala 950 Met Leu Lys	Leu Ile Asn Val 935 Pro Val Asn Arg	Thr Phe Val 920 Leu Glu Met Val Glu 1000	Lys Pro 905 Met Arg Gly Asp Arg 985 Phe	Ile 890 Ile Arg Gly Asn Thr 970 Leu	875 Leu Ser Gly Val 955 Lys Asp	Leu Lys Ile Gly 940 Lys Leu Tyr	Ala Met His 925 Phe Gln Lys Arg Asn 1009	Thr 910 Gly Leu Ala Ile 1le 990 Ser	Leu 895 Lys Val Pro Glu Ile 975 Ser Gln	880 Asp Gly Gly Met Pro 960 Glu Cys Ser
865 Phe Cys Glu Glu Thr 945 Glu Ile Leu	Ser Val Glu Leu 930 Pro Lys Leu Leu Glu	Asp His Asn 915 Met Glu Gln Cys 995 Thr	Leu Val 900 Lys Thr Ala Asp Phe 980 Ile	Leu 885 Thr Gly Gln Ala Ile 965 Ile	870 Arg Thr Ser Val Ala 950 Met Leu Lys	Leu Ile Asn Val 935 Pro Val Asn Arg Asn	Thr Phe Val 920 Leu Glu Met Val Glu 1000 Ser	Lys Pro 905 Met Arg Gly Asp Arg 985 Phe	Ile 890 Ile Arg Gly Asn Thr 970 Leu	875 Leu Ser Gly Val 955 Lys Asp	Leu Lys Ile Gly 940 Lys Leu Tyr ser Gly	Ala Met His 925 Phe Gln Lys Arg Asn 1009 Pro	Thr 910 Gly Leu Ala Ile 1le 990 Ser	Leu 895 Lys Val Pro Glu Ile 975 Ser	880 Asp Gly Gly Met Pro 960 Glu Cys Ser
865 Phe Cys Glu Glu Thr 945 Glu Ile Leu Ser	Ser Val Glu Leu 930 Pro Lys Leu Leu Glu 1010	Asp His Asn 915 Met Glu Gln Cys 995 Thr	Leu Val 900 Lys Thr Ala Asp Phe 980 Ile Ser	Leu 885 Thr Gly Gln Ala Ile 965 Ile Phe Ser	870 Arg Thr Ser Val Ala 950 Met Leu Lys Gly	Leu Ile Asn Val 935 Pro Val Asn Arg Asn 1015	Thr Phe Val 920 Leu Glu Met Val Glu 1000 Ser	Pro 905 Met Arg Gly Asp Arg 985 Phe	Ile 890 Ile Arg Gly Asn Thr 970 Leu Asp	875 Leu Ser Gly Val 955 Lys Asp Glu Glu	Leu Lys Ile Gly 940 Lys Leu Tyr Ser Gly 1020	Ala Met His 925 Phe Gln Lys Arg Asn 1009 Pro	Thr 910 Gly Leu Ala Ile 1le 990 Ser 5	Leu 895 Lys Val Pro Glu Ile 975 Ser Gln Asn	880 Asp Gly Gly Met Pro 960 Glu Cys Ser Val
865 Phe Cys Glu Glu Thr 945 Glu Ile Leu Ser	Ser Val Glu Leu 930 Pro Lys Leu Leu Glu 1010	Asp His Asn 915 Met Glu Gln Cys 995 Thr	Leu Val 900 Lys Thr Ala Asp Phe 980 Ile Ser	Leu 885 Thr Gly Gln Ala Ile 965 Ile Phe Ser	870 Arg Thr Ser Val Ala 950 Met Leu Lys Gly	Leu Ile Asn Val 935 Pro Val Asn Arg Asn 1015	Thr Phe Val 920 Leu Glu Met Val Glu 1000 Ser	Pro 905 Met Arg Gly Asp Arg 985 Phe	Ile 890 Ile Arg Gly Asn Thr 970 Leu Asp	875 Leu Ser Gly Val 955 Lys Asp Glu Glu	Leu Lys Ile Gly 940 Lys Leu Tyr Ser Gly 1020	Ala Met His 925 Phe Gln Lys Arg Asn 1009 Pro	Thr 910 Gly Leu Ala Ile 1le 990 Ser 5	Leu 895 Lys Val Pro Glu Ile 975 Ser Gln Asn	880 Asp Gly Gly Met Pro 960 Glu Cys Ser
865 Phe Cys Glu Glu Thr 945 Glu Ile Leu Ser Pro	Ser Val Glu Leu 930 Pro Lys Leu Glu 1010 Gly	Asp His Asn 915 Met Glu Gln Cys 995 Thr	Leu Val 900 Lys Thr Ala Asp Phe 980 Ile Ser	Leu 885 Thr Gly Gln Ala Ile 965 Ile Phe Ser	870 Arg Thr Ser Val Ala 950 Met Leu Lys Gly Phe	Leu Ile Asn Val 935 Pro Val Asn Arg Asn 1019 Glu	Thr Phe Val 920 Leu Glu Met Val Glu 1000 Ser	Pro 905 Met Arg Gly Asp Arg 985 Phe	Ile 890 Ile Arg Gly Asn Thr 970 Leu Asp	875 Leu Ser Gly Val 955 Lys Asp Glu Glu	Leu Lys Ile Gly 940 Lys Leu Tyr Ser Gly 1020 Gln	Ala Met His 925 Phe Gln Lys Arg Asn 1009 Pro	Thr 910 Gly Leu Ala Ile 1le 990 Ser 5	Leu 895 Lys Val Pro Glu Ile 975 Ser Gln Asn	880 Asp Gly Gly Met Pro 960 Glu Cys Ser Val Ile
865 Phe Cys Glu Glu Thr 945 Glu Ile Leu Ser Pro 1025	Ser Val Glu Leu 930 Pro Lys Leu Glu 1010 Gly	Asp His Asn 915 Met Glu Gln Cys 995 Thr	Leu Val 900 Lys Thr Ala Asp Phe 980 Ile Ser Leu	Leu 885 Thr Gly Gln Ala Ile 965 Ile Phe Ser Asp	870 Arg Thr Ser Val Ala 950 Met Leu Lys Gly Phe 1030	Leu Ile Asn Val 935 Pro Val Asn Arg Asn 1019 Glu	Thr Phe Val 920 Leu Glu Met Val Glu 1000 Ser His	Lys Pro 905 Met Arg Gly Asp Arg 985 Phe Ser	Ile 890 Ile Arg Gly Asn Thr 970 Leu Asp Gln	875 Leu Ser Ser Gly Val 955 Lys Asp Glu Glu Glu 1039	Leu Lys Ile Gly 940 Lys Leu Tyr Ser Gly 1020 Gln	Ala Met His 925 Phe Gln Lys Arg Asn 1009 Pro Ala	Thr 910 Gly Leu Ala Ile 990 Ser Ser Glu	Leu 895 Lys Val Pro Glu Ile 975 Ser Gln Asn Gly	880 Asp Gly Gly Met Pro 960 Glu Cys Ser Val
865 Phe Cys Glu Glu Thr 945 Glu Ile Leu Ser Pro 1025	Ser Val Glu Leu 930 Pro Lys Leu Glu 1010 Gly	Asp His Asn 915 Met Glu Gln Cys 995 Thr	Leu Val 900 Lys Thr Ala Asp Phe 980 Ile Ser Leu	Leu 885 Thr Gly Gln Ala Ile 965 Ile Phe Ser Asp	870 Arg Thr Ser Val Ala 950 Met Leu Lys Gly Phe 1030 Glu	Leu Ile Asn Val 935 Pro Val Asn Arg Asn 1019 Glu	Thr Phe Val 920 Leu Glu Met Val Glu 1000 Ser His	Lys Pro 905 Met Arg Gly Asp Arg 985 Phe Ser	Ile 890 Ile Arg Gly Asn Thr 970 Leu Asp Gln Glu Leu	875 Leu Ser Ser Gly Val 955 Lys Asp Glu Glu 1039 Asp	Leu Lys Ile Gly 940 Lys Leu Tyr Ser Gly 1020 Gln	Ala Met His 925 Phe Gln Lys Arg Asn 1009 Pro Ala	Thr 910 Gly Leu Ala Ile 990 Ser Ser Glu	Leu 895 Lys Val Pro Glu Ile 975 Ser Gln Asn Gly	880 Asp Gly Gly Met Pro 960 Glu Cys Ser Val Ile 1040 Gly
Glu Glu Thr 945 Glu Ile Leu Ser Pro 1025 Phe	Ser Val Glu Leu 930 Pro Lys Leu Glu 1010 Gly Gly	Asp His Asn 915 Met Glu Gln Cys 995 Thr	Leu Val 900 Lys Thr Ala Asp Phe 980 Ile Ser Leu Ser	Leu 885 Thr Gly Gln Ala Ile 965 Ile Phe Ser Asp	870 Arg Thr Ser Val Ala 950 Met Leu Lys Gly Phe 1030 Glu	Leu Ile Asn Val 935 Pro Val Asn Arg Asn 1019 Glu Asn	Thr Phe Val 920 Leu Glu Met Val Glu 1000 Ser His	Lys Pro 905 Met Arg Gly Asp Arg 985 Phe Ser Ile Pro	Ile 890 Ile Arg Gly Asn Thr 970 Leu Asp Gln Glu Leu 1056	Ser Ser Gly Val 955 Lys Asp Glu Glu 1039 Asp	Leu Lys Ile Gly 940 Lys Leu Tyr Ser Gly 1020 Gln Leu	Ala Met His 925 Phe Gln Lys Arg Asn 1009 Pro Ala Asp	Thr 910 Gly Leu Ala Ile 990 Ser Glu Asp	Leu 895 Lys Val Pro Glu Ile 975 Ser Gln Asn Gly	880 Asp Gly Gly Met Pro 960 Glu Cys Ser Val Ile 1040 Gly
Glu Glu Thr 945 Glu Ile Leu Ser Pro 1025 Phe	Ser Val Glu Leu 930 Pro Lys Leu Glu 1010 Gly Gly	Asp His Asn 915 Met Glu Gln Cys 995 Thr	Leu Val 900 Lys Thr Ala Asp Phe 980 Ile Ser Leu Ser Phe	Leu 885 Thr Gly Gln Ala Ile 965 Ile Phe Ser Asp Glu 1049 Leu	870 Arg Thr Ser Val Ala 950 Met Leu Lys Gly Phe 1030 Glu	Leu Ile Asn Val 935 Pro Val Asn Arg Asn 1019 Glu Asn	Thr Phe Val 920 Leu Glu Met Val Glu 1000 Ser His	Lys Pro 905 Met Arg Gly Asp Arg 985 Phe Ser Ile Pro Leu	Ile 890 Ile Arg Gly Asn Thr 970 Leu Asp Gln Glu Leu 1050 His	Ser Ser Gly Val 955 Lys Asp Glu Glu 1039 Asp	Leu Lys Ile Gly 940 Lys Leu Tyr Ser Gly 1020 Gln Leu	Ala Met His 925 Phe Gln Lys Arg Asn 1009 Pro Ala Asp	Thr 910 Gly Leu Ala Ile 990 Ser Ser Glu Asp His	Leu 895 Lys Val Pro Glu Ile 975 Ser Gln Asn Gly His 1059 Asp	880 Asp Gly Gly Met Pro 960 Glu Cys Ser Val Ile 1040 Gly
Glu Glu Thr 945 Glu Ile Leu Ser Pro 1025 Phe	Ser Val Glu Leu 930 Pro Lys Leu Glu 1010 Gly Gly	Asp His Asn 915 Met Glu Gln Cys 995 Thr	Leu Val 900 Lys Thr Ala Asp Phe 980 Ile Ser Leu Ser	Leu 885 Thr Gly Gln Ala Ile 965 Ile Phe Ser Asp Glu 1049 Leu	870 Arg Thr Ser Val Ala 950 Met Leu Lys Gly Phe 1030 Glu	Leu Ile Asn Val 935 Pro Val Asn Arg Asn 1019 Glu Asn	Thr Phe Val 920 Leu Glu Met Val Glu 1000 Ser His	Lys Pro 905 Met Arg Gly Asp Arg 985 Phe Ser Ile Pro	Ile 890 Ile Arg Gly Asn Thr 970 Leu Asp Gln Glu Leu 1050 His	Ser Ser Gly Val 955 Lys Asp Glu Glu 1039 Asp	Leu Lys Ile Gly 940 Lys Leu Tyr Ser Gly 1020 Gln Leu	Ala Met His 925 Phe Gln Lys Arg Asn 1009 Pro Ala Asp	Thr 910 Gly Leu Ala Ile 990 Ser Glu Asp	Leu 895 Lys Val Pro Glu Ile 975 Ser Gln Asn Gly His 1059 Asp	880 Asp Gly Gly Met Pro 960 Glu Cys Ser Val Ile 1040 Gly
Glu Glu Thr 945 Glu Ile Leu Ser Pro 1025 Phe Gly	Ser Val Glu Leu 930 Pro Lys Leu Glu 1010 Gly Gly Arg	Asp His Asn 915 Met Glu Gln Cys 995 Thr Ala Gly	Leu Val 900 Lys Thr Ala Asp Phe 980 Ile Ser Leu Ser Phe 1066	Leu 885 Thr Gly Gln Ala Ile 965 Ile Phe Ser Asp Glu 1049 Leu	870 Arg Thr Ser Val Ala 950 Met Leu Lys Gly Phe 1030 Glu Arg	Leu Ile Asn Val 935 Pro Val Asn Arg Asn 1019 Glu O Asn Val	Thr Phe Val 920 Leu Glu Met Val Glu 1000 Ser His Thr Leu	Lys Pro 905 Met Arg Gly Asp Arg 985 Phe Ser Ile Pro Leu 1069	Ile 890 Ile Arg Gly Asn Thr 970 Leu Asp Gln Glu Leu 1050 His	Ser Ser Gly Val 955 Lys Asp Glu Glu 1039 Asp Leu	Leu Lys Ile Gly 940 Lys Leu Tyr Ser Gly 1020 Gln Leu Thr	Ala Met His 925 Phe Gln Lys Arg Asn 1009 Pro Ala Asp Met	Thr 910 Gly Leu Ala Ile 990 Ser Glu Asp His	Leu 895 Lys Val Pro Glu Ile 975 Ser Gln Asn Gly His 1059 Asp	880 Asp Gly Gly Met Pro 960 Glu Cys Ser Val Ile 1040 Gly
Glu Glu Thr 945 Glu Ile Leu Ser Pro 1025 Phe Gly	Ser Val Glu Leu 930 Pro Lys Leu Glu 1010 Gly Gly Arg	Asp His Asn 915 Met Glu Gln Cys 995 Thr Ala Gly	Leu Val 900 Lys Thr Ala Asp Phe 980 Ile Ser Leu Ser Phe 1066 Val	Leu 885 Thr Gly Gln Ala Ile 965 Ile Phe Ser Asp Glu 1049 Leu	870 Arg Thr Ser Val Ala 950 Met Leu Lys Gly Phe 1030 Glu Arg	Leu Ile Asn Val 935 Pro Val Asn Arg Asn 1019 Glu O Asn Val	Thr Phe Val 920 Leu Glu Met Val Glu 1000 Ser His Thr Leu	Lys Pro 905 Met Arg Gly Asp Arg 985 Phe Ser Ile Pro Leu 1069 Gln	Ile 890 Ile Arg Gly Asn Thr 970 Leu Asp Gln Glu Leu 1050 His	Ser Ser Gly Val 955 Lys Asp Glu Glu 1039 Asp Leu	Leu Lys Ile Gly 940 Lys Leu Tyr Ser Gly 1020 Gln Leu Thr	Ala Met His 925 Phe Gln Lys Arg Asn 1009 Pro Ala Asp Met	Thr 910 Gly Leu Ala Ile 990 Ser Glu Asp His 1070 His	Leu 895 Lys Val Pro Glu Ile 975 Ser Gln Asn Gly His 1059 Asp	880 Asp Gly Gly Met Pro 960 Glu Cys Ser Val Ile 1040 Gly 5
Glu Glu Thr 945 Glu Ile Leu Ser Pro 1025 Phe Gly Pro	Ser Val Glu Leu 930 Pro Lys Leu Glu 1010 Gly Gly Arg Pro	Asp His Asn 915 Met Glu Gln Cys 995 Thr Ala Gly Thr	Leu Val 900 Lys Thr Ala Asp Phe 980 Ile Ser Leu Ser Phe 1066 Val	Leu 885 Thr Gly Gln Ala Ile 965 Ile Phe Ser Asp Glu 1049 Leu Ser	870 Arg Thr Ser Val Ala 950 Met Leu Lys Gly Phe 1030 Glu Arg Gly	Leu Ile Asn Val 935 Pro Val Asn Arg Asn 1019 Glu O Asn Val	Thr Phe Val 920 Leu Glu Met Val Glu 1000 Ser His Thr Leu Leu 1080	Lys Pro 905 Met Arg Gly Asp Arg 985 Phe Ser Ile Pro Leu 1069 Gln	Ile 890 Ile Arg Gly Asn Thr 970 Leu Asp Gln Glu Leu 1050 His	Ser Ser Gly Val 955 Lys Asp Glu Glu 1039 Asp Leu Leu	Leu Lys Ile Gly 940 Lys Leu Tyr Ser Gly 1020 Gln Leu Thr	Ala Met His 925 Phe Gln Lys Arg Asn 1009 Pro Ala Asp Met Arg 1089	Thr 910 Gly Leu Ala Ile 990 Ser Glu Asp His 1070 His	Leu 895 Lys Val Pro Glu Ile 975 Ser Gln Asn Gly His 1059 Asp O Phe	880 Asp Gly Gly Met Pro 960 Glu Cys Ser Val Ile 1040 Gly Tyr Ser
Glu Glu Thr 945 Glu Ile Leu Ser Pro 1025 Phe Gly Pro	Ser Val Glu Leu 930 Pro Lys Leu Glu 1010 Gly Gly Arg Pro	Asp His Asn 915 Met Glu Gln Cys 995 Thr Ala Gly Thr Leu 1079	Leu Val 900 Lys Thr Ala Asp Phe 980 Ile Ser Leu Ser Phe 1066 Val	Leu 885 Thr Gly Gln Ala Ile 965 Ile Phe Ser Asp Glu 1049 Leu Ser	870 Arg Thr Ser Val Ala 950 Met Leu Lys Gly Phe 1030 Glu Arg Gly	Leu Ile Asn Val 935 Pro Val Asn Arg Asn 1019 Glu O Asn Val	Thr Phe Val 920 Leu Glu Met Val Glu 1000 Ser His Thr Leu 1080 Ala	Lys Pro 905 Met Arg Gly Asp Arg 985 Phe Ser Ile Pro Leu 1069 Gln	Ile 890 Ile Arg Gly Asn Thr 970 Leu Asp Gln Glu Leu 1050 His	Ser Ser Gly Val 955 Lys Asp Glu Glu 1039 Asp Leu Leu	Leu Lys Ile Gly 940 Lys Leu Tyr Ser Gly 1020 Gln Leu Thr	Ala Met His 925 Phe Gln Lys Arg Asn 1005 Pro Ala Asp Met Arg 1085 Gln	Thr 910 Gly Leu Ala Ile 990 Ser Glu Asp His 1070 His	Leu 895 Lys Val Pro Glu Ile 975 Ser Gln Asn Gly His 1059 Asp	880 Asp Gly Gly Met Pro 960 Glu Cys Ser Val Ile 1040 Gly Tyr Ser

Thr Ser Gln Asp	Val Asp Asn 1110	Tyr Lys Gln	Ile Lys Gln 1115	Asp Leu Asp 1120
Gln Leu Arg Ser	Ile Val Glu		Leu Trp Val	
Gln Gly Pro Asp	1125 Glu Pro Met	113 Asp Gly Ala		1135 Asn Glu His
114		1145	Ton Iva His	1150
Lys Lys Thr Glu 1155	Giu Giy Thr	Ser Lys Pro	116	
Ser Ser Tyr Asn 1170	Tyr Arg Val		Ile Leu Ile 1180	Arg Leu Ser
Lys Leu Cys Val 1185	Gln Glu Ser 1190	Ala Ser Val	Arg Lys Ser 1195	Arg Lys Gln 1200
Gln Gln Arg Leu	_			
Leu Leu Gln Ile	1205 Pro Tyr Glu	121 Lys Ala Glu		1215 Met Gln Glu
122	0	1225		1230
Ile Met Arg Leu 1235	Ala His Glu	Phe Leu Gln 1240	Asn Phe Cys	
Gln Gln Asn Gln 1250	Ala Leu Leu 125	-	Ile Asn Leu 1260	Phe Leu Asn
Pro Gly Ile Leu				
1265	1270	A Cl. A	1275	1280
Phe Gln Leu Cys	1285	Ash Giu Arg		1295
His Cys Ile Glu 130	-	Arg Asn Val	Gln Tyr Ile	Lys Phe Leu 1310
Gln Thr Ile Val				
1315 Met Val Met Ala	Glu Leu Val	1320	132 Glu Asp Val	
1330	133	5	1340	
Tyr Asn Asp Arg		Gln Thr Leu		
1345 Glu Arg Asp Arg	1350 Met Asp Glu	Asn Ser Pro	1355 Leu Phe Met	1360 Tyr His Ile
	1365	137	0	1375
His Leu Val Glu 138	0	1385		1390
Thr Glu Ile Lys	Cys Asn Ser			
1395 Val Val Thr His	Glu Asp Cvs	1400 Ile Pro Glu	140 Val Lys Ile	
1410	141	5	1420	
Asn Phe Leu Asn 1425		Val Asp Thr		Met Lys Glu 1440
Ile Tyr Thr Ser				
7 - 7 - Co. 3 - 7	1445	145		1455
Asp Ile Cys Arg		1465	Asp Arg Lys	1470
Ser Val Leu Glu 1475	Lys Tyr Val	Thr Glu Ile	Val Met Ser 148	
Thr Phe Phe Ser	Ser Pro Phe	Ser Asp Gln	Ser Thr Thr	Leu Gln Thr
Arg Gln Pro Val				Arg Val Tyr
1505	1510	Con Cln Iva	1515	1520
His Cys Asn Trp	1525	ser GIR Lys		1535
Ile Arg Val Leu	Ser Asp Val	Ala Lys Ser		
154 Val Asp Leu Asp		1545 Asn Asn Leu		
1555				
The Val Cla Tag		1560	156 Leu Ser Ala	
Ile Val Gln Lys 1570		1560 Asn Trp Arg		

Ala Arg Arg Asp Glu Val Leu Ala Ala Ser Arg Asp Tyr Arg Asn Ile 1590 1595 Ile Glu Arg Leu Gln Asp Ile Val Ser Ala Leu Glu Asp Arg Leu Arg 1605 1610 Pro Leu Val Gln Ala Glu Leu Ser Val Leu Val Asp Val Leu His Arg 1625 Pro Glu Leu Leu Phe Pro Glu Asn Thr Asp Ala Arg Arg Lys Cys Glu 1640 Ser Gly Gly Phe Ile Cys Lys Leu Ile Lys His Thr Lys Gln Leu Leu 1655 1660 Glu Glu Asn Glu Glu Lys Leu Cys Ile Lys Val Leu Gln Thr Leu Arg 1675 1670 Glu Met Met Thr Lys Asp Arg Gly Tyr Gly Glu Lys Gly Glu Ala Leu 1690 1685 Arg Gln Ile Leu Val Asn Arg Tyr Tyr Gly Asn Ile Arg Pro Ser Gly 1700 1705 Arg Arg Glu Glu Leu Thr Ser Phe Gly Asn Gly Pro Leu Ser Pro Gly 1715 1720 1725 Gly Pro Ser Lys Pro Gly Gly Gly Gly Gly Pro Gly Ser Gly Ser 1730 1735 1740 Thr Ser Arg Gly Glu Met Ser Leu Ala Glu Val Gln Cys His Leu Asp 1750 1755 1760 Lys Glu Gly Ala Ser Asn Leu Val Ile Asp Leu Ile Met Asn Ala Ser 1765 1770 Ser Asp Arg Val Phe His Glu Ser Ile Leu Leu Ala Ile Ala Leu Leu 1780 1785 Glu Gly Gly Asn Thr Thr Ile Gln His Ser Phe Phe Cys Arg Leu Thr 1795 1800 1805 Glu Asp Lys Lys Ser Glu Lys Phe Phe Lys Val Phe Tyr Asp Arg Met 1815 1820 Lys Val Ala Gln Glu Ile Lys Ala Thr Val Thr Val Asn Thr Ser 1825 1830 1835 1840 Asp Leu Gly Asn Lys Lys Lys Asp Asp Glu Val Asp Arg Asp Ala Pro 1845 1850 Ser Arg Lys Lys Ala Lys Glu Pro Thr Thr Gln Ile Thr Glu Glu Val 1860 1865 1870 Arg Asp Gln Leu Leu Glu Ala Ser Ala Ala Thr Arg Lys Ala Phe Thr 1875 1880 1885 Thr Phe Arg Arg Glu Ala Asp Pro Asp Asp His Tyr Gln Ser Gly Glu 1890 1895 1900 Gly Thr Gln Ala Thr Thr Asp Lys Ala Lys Asp Leu Glu Met Ser 1910 1915 1920 Ala Val Ile Thr Ile Met Gln Pro Ile Leu Arg Phe Leu Gln Leu Leu 1925 1930 1935 Cys Glu Asn His Asn Arg Asp Leu Gln Asn Phe Leu Arg Cys Gln Asn 1940 1945 Asn Lys Thr Asn Tyr Asn Leu Val Cys Glu Thr Leu Gln Phe Leu Asp 1960 Cys Ile Cys Gly Ser Thr Thr Gly Gly Leu Gly Leu Leu Gly Leu Tyr 1975 1980 Ile Asn Glu Lys Asn Val Ala Leu Ile Asn Gln Thr Leu Glu Ser Leu 1990 1995 Thr Glu Tyr Cys Gln Gly Pro Cys His Glu Asn Gln Asn Cys Ile Ala 2005 2010 Thr His Glu Ser Asn Gly Ile Asp Ile Ile Thr Ala Leu Ile Leu Asn 2025 2030 2020 Asp Ile Asn Pro Leu Gly Lys Lys Arg Met Asp Leu Val Leu Glu Leu 2045 2040 Lys Asn Asn Ala Ser Lys Leu Leu Ala Ile Met Glu Ser Arg His 2055 2060

Asp Ser Glu Asn Ala Glu Arg Ile Leu Tyr Asn Met Arg Pro Lys Glu 2070 2075 Leu Val Glu Val Ile Lys Lys Ala Tyr Met Gln Gly Glu Val Glu Phe 2085 2090 Glu Asp Gly Glu Asn Gly Glu Asp Gly Ala Ala Ser Pro Arg Asn Val 2100 2105 Gly His Asn Ile Tyr Ile Leu Ala His Gln Leu Ala Arg His Asn Lys 2120 2125 Glu Leu Gln Thr Met Leu Lys Pro Gly Gly Gln Val Asp Gly Asp Glu 2135 2140 Ala Leu Glu Phe Tyr Ala Lys His Thr Ala Gln Ile Glu Ile Val Arg 2145 2150 2155 Leu Asp Arg Thr Met Glu Gln Ile Val Phe Pro Val Pro Ser Ile Cys 2165 2170 2175 Glu Phe Leu Thr Lys Glu Ser Lys Leu Arg Ile Tyr Tyr Thr Thr Glu 2180 2185 2190 Arg Asp Glu Gln Gly Ser Lys Ile Asn Asp Phe Phe Leu Arg Ser Glu 2205 2195 2200 Asp Leu Phe Asn Glu Met Asn Trp Gln Lys Lys Leu Arg Ala Gln Pro 2220 2215 Val Leu Tyr Trp Cys Ala Arg Asn Met Ser Phe Trp Ser Ser Ile Ser 2230 2235 Phe Asn Leu Ala Val Leu Met Asn Leu Leu Val Ala Phe Phe Tyr Pro 2245 2250 2255 Phe Lys Gly Val Arg Gly Gly Thr Leu Glu Pro His Trp Ser Gly Leu 2260 2265 2270 Leu Trp Thr Ala Met Leu Ile Ser Leu Ala Ile Val Ile Ala Leu Pro 2275 2280 2285 Lys Pro His Gly Ile Arg Ala Leu Ile Ala Ser Thr Ile Leu Arg Leu 2290 2295 2300 Ile Phe Ser Val Gly Leu Gln Pro Thr Leu Phe Leu Leu Gly Ala Phe 2305 2310 2315 Asn Val Cys Asn Lys Ile Ile Phe Leu Met Ser Phe Val Gly Asn Cys 2325 2330 Gly Thr Phe Thr Arg Gly Tyr Arg Ala Met Val Leu Asp Val Glu Phe 2340 2345 Leu Tyr His Leu Leu Tyr Leu Leu Ile Cys Ala Met Gly Leu Phe Val 2355 2360 2365 His Glu Phe Phe Tyr Ser Leu Leu Leu Phe Asp Leu Val Tyr Arg Glu 2375 2380 Glu Thr Leu Leu Asn Val Ile Lys Ser Val Thr Arg Asn Gly Arg Pro 2390 2395 Ile Ile Leu Thr Ala Ala Leu Ala Leu Ile Leu Val Tyr Leu Phe Ser 2410 Ile Val Gly Tyr Leu Phe Phe Lys Asp Asp Phe Ile Leu Glu Val Asp 2425 Arg Leu Pro Asn Glu Thr Ala Gly Pro Glu Thr Gly Glu Ser Leu Ala 2440 Asn Asp Phe Leu Tyr Ser Asp Val Cys Arg Val Glu Thr Gly Glu Asn 2455 2460 Cys Thr Ser Pro Ala Pro Lys Glu Glu Leu Leu Pro Val Glu Glu Thr 2470 2475 Glu Gln Asp Lys Glu His Thr Cys Glu Thr Leu Leu Met Cys Ile Val 2485 2490 Thr Val Leu Ser His Gly Leu Arg Ser Gly Gly Gly Val Gly Asp Val 2500 2505 Leu Arg Lys Pro Ser Lys Glu Glu Pro Leu Phe Ala Ala Arg Val Ile 2515 2520 2525 Tyr Asp Leu Leu Phe Phe Met Val Ile Ile Val Leu Asn Leu 2535

Ile Phe Gly Val Ile Ile Asp Thr Phe Ala Asp Leu Arg Ser Glu Lys 2550 2555 Gln Lys Lys Glu Glu Ile Leu Lys Thr Thr Cys Phe Ile Cys Gly Leu 2570 2565 Glu Arg Asp Lys Phe Asp Asn Lys Thr Val Thr Phe Glu Glu His Ile 2585 Lys Glu Glu His Asn Met Trp His Tyr Leu Cys Phe Ile Val Leu Val 2600 Lys Val Lys Asp Ser Thr Glu Tyr Thr Gly Pro Glu Ser Tyr Val Ala 2615 2620 Glu Met Ile Arg Glu Arg Asn Leu Asp Trp Phe Pro Arg Met Arg Ala 2635 2630 Met Ser Leu Val Ser Ser Asp Ser Glu Gly Glu Gln Asn Glu Leu Arg 2645 2650 Asn Leu Gln Glu Lys Leu Glu Ser Thr Met Lys Leu Val Thr Asn Leu 2665 2660 Ser Gly Gln Leu Ser Glu Leu Lys Asp Gln Met Thr Glu Gln Arg Lys 2675 2680 2685 Gln Lys Gln Arg Ile Gly Leu Leu Gly His Pro Pro His Met Asn Val 2700 2695 Asn Pro Gln Gln Pro Ala 2705 2710 <210> 10 <211> 2749 <212> PRT <213> Artificial Sequence <223> Description of Artificial Sequence:/note = synthetic construct <400> 10 Met Ser Asp Lys Met Ser Ser Phe Leu His Ile Gly Asp Ile Cys Ser 1.0 Leu Tyr Ala Glu Gly Ser Thr Asn Gly Phe Ile Ser Thr Leu Gly Leu 2.0 25 Val Asp Asp Arg Cys Val Val Gln Pro Glu Ala Gly Asp Leu Asn Asn 40 4.5 Pro Pro Lys Lys Phe Arg Asp Cys Leu Phe Lys Leu Cys Pro Met Asn 55 Arg Tyr Ser Ala Gln Lys Gln Phe Trp Lys Ala Ala Lys Pro Gly Ala 70 75 Asn Ser Thr Thr Asp Ala Val Leu Leu Asn Lys Leu His His Ala Ala 85 90 Asp Leu Glu Lys Lys Gln Asn Glu Thr Glu Asn Arg Lys Leu Leu Gly 105 Thr Val Ile Gln Tyr Gly Asn Val Ile Gln Leu Leu His Leu Lys Ser

115 120 125 Asn Lys Tyr Leu Thr Val Asn Lys Arg Leu Pro Ala Leu Leu Glu Lys

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Val	Asn 210	Ser	Val	Asn	Cys	Asn 215	Thr	Ser	Trp	Lys	Ile 220	Val	Leu	Phe	Met
Lys 225	Trp	Ser	Asp	Asn	Lys 230	Asp	Asp	Ile	Leu	Lys 235	Gly	Gly	Asp	Val	Val 240
Arg	Leu	Phe	His	Ala 245	Glu	Gln	Glu	Lys	Phe 250	Leu	Thr	Cys	Asp	Glu 255	His
Arg	Lys	Lys	Gln 260	His	Val	Phe	Leu	Arg 265	Thr	Thr	Gly	Arg	Gln 270	Ser	Ala
Thr	Ser	Ala 275	Thr	Ser	Ser	Lys	Ala 280	Leu	Trp	Glu	Val	Glu 285	Val	Val	Gln
His	Asp 290	Pro	Cys	Arg	Gly	Gly 295	Ala	Gly	Tyr	Trp	Asn 300	Ser	Leu	Phe	Arg
Phe 305	Lys	His	Leu	Ala	Thr 310	Gly	His	Tyr	Leu	Ala 315	Ala	Glu	Val	Asp	Pro 320
Asp	Phe	Glu	Glu	Glu 325	Cys	Leu	Glu	Phe	Gln 330	Pro	Ser	Val	Asp	Pro 335	Asp
Gln	Asp	Ala	Ser 340	Arg	Ser	Arg	Leu	Arg 345	Asn	Ala	Gln	Glu	Lys 350	Met	Val
Tyr	Ser	Leu 355	Val	Ser	Val	Pro	Glu 360	Gly	Asn	Asp	Ile	Ser 365	Ser	Ile	Phe
Glu	Leu 370	Asp	Pro	Thr	Thr	Leu 375	Arg	Gly	Gly	Asp	Ser 380	Leu	Val	Pro	Arg
Asn 385	Ser	Tyr	Val	Arg	Leu 390	Arg	His	Leu	Cys	Thr 395	Asn	Thr	Trp	Val	His 400
Ser	Thr	Asn	Ile	Pro 405	Ile	Asp	Lys	Glu	Glu 410	Glu	Lys	Pro	Val	Met 415	Leu
Lys	Ile	Gly	Thr 420	Ser	Pro	Leu	Lys	Glu 425	Asp	Lys	Glu	Ala	Phe 430		Ile
Val	Pro	Val 435	Ser	Pro	Ala	Glu	Val 440		Asp	Leu	Asp	Phe 445	Ala	Asn	Asp
Ala	Ser 450	Lys	Val	Leu	Gly	Ser 455	Ile	Ala	Gly	Lys	Leu 460	Glu	Lys	Gly	Thr
Ile 465	Thr	Gln	Asn	Glu	Arg 470	Arg	Ser	Val	Thr	Lys 475	Leu	Leu	Glu	Asp	Leu 480
	Tyr	Phe	Val	Thr 485		Gly	Thr	Asn	Ser 490		Gln	Asp	Val	Leu 495	
Val	Val	Phe	Ser 500	Lys	Pro	Asn	Arg	Glu 505	Arg	Gln	Lys	Leu	Met 510	Arg	Glu
Gln	Asn	Ile 515	Leu	Lys	Gln	Ile	Phe 520	ГÀЗ	Leu	Leu	Gln	Ala 525	Pro	Phe	Thr
Asp	Cys 530	Gly	Asp	Gly	Pro	Met 535	Leu	Arg	Leu	Glu	Glu 540	Leu	Gly	Asp	Gln
Arg 545	His	Ala	Pro	Phe	Arg 550	His	Ile	Cys	Arg	Leu 555	Cys	Tyr	Arg	Val	Leu 560
Arg	His	Ser	Gln	Gln 565	Asp	Tyr	Arg	Lys	Asn 570	Gln	Glu	Tyr	Ile	Ala 575	Lys
Gln	Phe	Gly	Phe 580	Met	Gln	Lys	Gln	Ile 585	Gly	Tyr	Asp	Val	Leu 590	Ala	Glu
Asp	Thr	Ile 595	Thr	Ala	Leu	Leu	His 600	Asn	Asn	Arg	Lys	Leu 605	Leu	Glu	Lys
His	Ile 610	Thr	Ala	Ala	Glu	Ile 615	Asp	Thr	Phe	Val	Ser 620	Leu	Val	Arg	Lys
Asn 625	Arg	Glu	Pro	Arg	Phe 630	Leu	Asp	Tyr	Leu	Ser 635	Asp	Leu	Cys	Val	Ser 640
	Asn	Lys	Ser	Ile 645		Val	Thr	Gln	Glu 650		Ile	Cys	Lys	Ala 655	
Leu	Asn	Pro	Thr 660		Ala	Asp	Ile	Leu 665		Glu	Thr	Lys	Leu 670		Leu
Ser	Arg	Phe 675		Phe	Glu	Gly	Val 680		Thr	Gly	Glu	Asn 685		Leu	Glu

Ala	Gly 690	Glu	Asp	Glu	Glu	Glu 695	Val	Trp	Leu	Phe	Trp 700	Arg	Asp	Ser	Asn
Lys 705	Glu	Ile	Arg	Ser	Lys 710	Ser	Val	Arg	Glu	Leu 715	Ala	Gln	Asp	Ala	Lys 720
Glu	Gly	Gln	Lys	Glu 725	Asp	Arg	Asp	Val	Leu 730	Ser	Tyr	Tyr	Arg	Tyr 735	Gln
			740			Met		745					750		
		755				Leu	760					765			
	770					Tyr 775					780				
785					790	Asp				795					800
	-	_		805		Trp			810					815	
_	_	_	820			Gly		825					830		
		835				Phe	840					845			
	850					Ser 855					860				
865	vaı	vaı	Asn	ьeu	870	Arg	Asn	ьeu	тте	875	Pne	GIY	Pne	ıyı	880
		_		885	_	Leu		_	890					895	
_			900			Ile		905					910		
		915				Asn	920					925			
	930					Val 935					940				
945					950	Pro				955					960
	_		_	965		Val			970					975	
			980			Asn		985					990		
		995				Arg	1000)				100	5		
	101	0				Asn 1015	5				102	0			
Pro 102	_	Ala	Leu	Asp	Phe 103		His	ITE	GIu	G1u 103!		Ala	GIu	GLY	Ile 1040
		Gly	Ser	Glu 104		Asn	Thr	Pro	Leu 105		Leu	Asp	Asp	His 105	
Gly	Arg	Thr	Phe		Arg	Val	Leu	Leu 106		Leu	Thr	Met	His 107		Tyr
Pro	Pro	Leu 107		Ser	Gly	Ala	Leu 1080		Leu	Leu	Phe	Arg 108		Phe	Ser
Gln	Arg		Glu	Val	Leu	Gln 109		Phe	Lys	Gln	Val		Leu	Leu	Val
Thr 110		Gln	Asp	Val	Asp 111	Asn 0	Tyr	Lys	Gln	Ile 111		Gln	Asp	Leu	Asp 1120
Gln	Leu	Arg	Ser	Ile 112		Glu	Lys	Ser	Glu 113		Trp	Val	Tyr	Lys 113	
Gln	Gly	Pro	Asp 114		Pro	Met	Asp	Gly 114		Ser	Gly	Glu	Asn 115		His
Lys	Lys	Thr 115		Glu	Gly	Thr	Ser 116		Pro	Leu	Lys	His 116		Ser	Thr

Ser Ser Tyr Asn 1170	Tyr Arg Val		Ile Leu Ile 1180	Arg Leu Ser
Lys Leu Cys Val 1185	Gln Glu Ser 1190	Ala Ser Val	Arg Lys Ser 1195	Arg Lys Gln 1200
Gln Gln Arg Leu	Leu Arg Asn 1205	Met Gly Ala 121		Val Leu Glu 1215
Leu Leu Gln Ile 122		Lys Ala Glu 1225	Asp Thr Lys	Met Gln Glu 1230
Ile Met Arg Leu 1235		1240	124	5
Gln Gln Asn Gln 1250	1259	5	1260	
Pro Gly Ile Leu 1265	1270		1275	1280
Phe Gln Leu Cys	Ser Glu Ile 1285	Asn Glu Arg 129		His Phe Val 1295
His Cys Ile Glu 130		Arg Asn Val	Gln Tyr Ile	Lys Phe Leu 1310
Gln Thr Ile Val 1315	Lys Ala Glu	Gly Lys Phe 1320	Ile Lys Lys 132	
Met Val Met Ala 1330	Glu Leu Val 133		Glu Asp Val 1340	Leu Val Phe
Tyr Asn Asp Arg				
1345 Glu Arg Asp Arg	1350 Met Asp Glu		1355 Leu Phe Met	1360 Tvr His Ile
	1365	137	0	1375
His Leu Val Glu 138		Val Cys Thr 1385	Glu Gly Lys	Asn Val Tyr 1390
Thr Glu Ile Lys 1395	Cys Asn Ser	Leu Leu Pro 1400	Leu Asp Asp 140	
Val Val Thr His 1410	Glu Asp Cys		Val Lys Ile 1420	Ala Tyr Ile
Asn Phe Leu Asn 1425	His Cys Tyr 1430	Val Asp Thr	Glu Val Glu 1435	Met Lys Glu 1440
Ile Tyr Thr Ser	1445	145	0	1455
Asp Ile Cys Arg 146		Asn Thr Ser 1465	Asp Arg Lys	His Ala Asp 1470
Ser Val Leu Glu 1475		1480	148	5
Thr Phe Phe Ser				Leu Gln Thr
1490 Arg Gln Pro Val	149! Dhe Val Gla			Ara Val Tyr
1505	1510	nea nea cin	1515	1520
His Cys Asn Trp	Leu Met Pro 1525	Ser Gln Lys 153		Glu Ser Cys 1535
Ile Arg Val Leu 154		Ala Lys Ser 1545	Arg Ala Ile	Ala Ile Pro 1550
Val Asp Leu Asp 1555			Phe Leu Lys	
Ile Val Gln Lys 1570	Thr Ala Met		Leu Ser Ala 1580	Arg Asn Ala
Ala Arg Arg Asp 1585	Glu Val Leu 1590	Ala Ala Ser	Arg Asp Tyr 1595	Arg Asn Ile 1600
Ile Glu Arg Leu		Val Ser Ala 161	Leu Glu Asp	
Pro Leu Val Gln 162				. Leu His Arg
	0	1625		1630
Pro Glu Leu Leu		1625 Asn Thr Asp	Ala Arg Arg	1630 J Lys Cys Glu

Ser Gly Gly Phe Ile Cys Lys Leu Ile Lys His Thr Lys Gln Leu Leu 1655 Glu Glu Asn Glu Glu Lys Leu Cys Ile Lys Val Leu Gln Thr Leu Arg 1670 1675 Glu Met Met Thr Lys Asp Arg Gly Tyr Gly Glu Lys Gln Ile Ser Ile 1685 1690 Asp Glu Leu Glu Asn Ala Glu Leu Pro Gln Pro Pro Glu Ala Glu Asn 1705 1700 Ser Thr Glu Glu Leu Glu Pro Ser Pro Pro Leu Arg Gln Leu Glu Asp 1720 1725 His Lys Arg Gly Glu Ala Leu Arg Gln Ile Leu Val Asn Arg Tyr Tyr 1735 1740 Gly Asn Ile Arg Pro Ser Gly Arg Arg Glu Glu Leu Thr Ser Phe Gly 1750 1755 Asn Gly Pro Leu Ser Pro Gly Gly Pro Ser Lys Pro Gly Gly Gly 1765 1770 Gly Gly Pro Gly Ser Gly Ser Thr Ser Arg Gly Glu Met Ser Leu Ala 1780 1785 1790 Glu Val Gln Cys His Leu Asp Lys Glu Gly Ala Ser Asn Leu Val Ile 1795 1800 Asp Leu Ile Met Asn Ala Ser Ser Asp Arg Val Phe His Glu Ser Ile 1815 1820 Leu Leu Ala Ile Ala Leu Leu Glu Gly Gly Asn Thr Thr Ile Gln His 1830 1835 Ser Phe Phe Cys Arg Leu Thr Glu Asp Lys Lys Ser Glu Lys Phe Phe 1845 1850 1855 Lys Val Phe Tyr Asp Arg Met Lys Val Ala Gln Gln Glu Ile Lys Ala 1860 1865 Thr Val Thr Val Asn Thr Ser Asp Leu Gly Asn Lys Lys Asp Asp 1875 1880 1885 Glu Val Asp Arg Asp Ala Pro Ser Arg Lys Lys Ala Lys Glu Pro Thr 1890 1895 1900 Thr Gln Ile Thr Glu Glu Val Arg Asp Gln Leu Leu Glu Ala Ser Ala 1910 1915 Ala Thr Arg Lys Ala Phe Thr Thr Phe Arg Arg Glu Ala Asp Pro Asp 1925 1930 1935 Asp His Tyr Gln Ser Gly Glu Gly Thr Gln Ala Thr Thr Asp Lys Ala 1940 1945 1950 Lys Asp Asp Leu Glu Met Ser Ala Val Ile Thr Ile Met Gln Pro Ile 1955 1960 1965 Leu Arg Phe Leu Gln Leu Leu Cys Glu Asn His Asn Arg Asp Leu Gln 1975 1980 Asn Phe Leu Arg Cys Gln Asn Asn Lys Thr Asn Tyr Asn Leu Val Cys 1990 1995 Glu Thr Leu Gln Phe Leu Asp Cys Ile Cys Gly Ser Thr Thr Gly Gly 2010 Leu Gly Leu Leu Gly Leu Tyr Ile Asn Glu Lys Asn Val Ala Leu Ile 2025 Asn Gln Thr Leu Glu Ser Leu Thr Glu Tyr Cys Gln Gly Pro Cys His 2040 2045 Glu Asn Gln Asn Cys Ile Ala Thr His Glu Ser Asn Gly Ile Asp Ile 2055 2060 Ile Thr Ala Leu Ile Leu Asn Asp Ile Asn Pro Leu Gly Lys Lys Arg 2070 2075 Met Asp Leu Val Leu Glu Leu Lys Asn Asn Ala Ser Lys Leu Leu Leu 2085 2090 Ala Ile Met Glu Ser Arg His Asp Ser Glu Asn Ala Glu Arg Ile Leu 2100 2105 Tyr Asn Met Arg Pro Lys Glu Leu Val Glu Val Ile Lys Lys Ala Tyr 2120

Met Gln Gly 2130	Glu Val	Glu Phe 2139		Gly	Glu Asn 214		Glu A	sp Gly
Ala Ala Ser	Pro Arg	Asn Val	Gly His	s Asn	Ile Tyr	Ile	Leu A	la His
2145	_	2150	_		2155			2160
Gln Leu Ala	Arg His 216		Glu Leu	1 Gln 2170		Leu		ro Gly 175
Gly Gln Val	Asp Gly 2180	Asp Glu	Ala Let 218		Phe Tyr	Ala	Lys H. 2190	is Thr
Ala Gln Ile 219		Val Arg	Leu Asp 2200	Arg	Thr Met	Glu 2205		le Val
Phe Pro Val 2210	Pro Ser	Ile Cys 221		e Leu	Thr Lys 222		Ser L	ys Leu
Arg Ile Tyr 2225	Tyr Thr	Thr Glu 2230	Arg Asp	Glu	Gln Gly 2235	Ser	Lys I	le Asn 2240
Asp Phe Phe	Leu Arg 224		Asp Let	1 Phe 2250		Met		rp Gln 255
Lys Lys Leu	Arg Ala 2260	Gln Pro	Val Let 226		Trp Cys	Ala	Arg A 2270	sn Met
Ser Phe Trp		Ile Ser	Phe Asi 2280	ı Leu	Ala Val	Leu 2285		sn Leu
Leu Val Ala 2290	Phe Phe	Tyr Pro 229		s Gly	Val Arg 230		Gly T	hr Leu
Glu Pro His	Trp Ser	_	Leu Tr	Thr		Leu	Ile S	
2305 Ala Ile Val	דות אום	2310	Tria Dra	. IIi a	2315	7~~	אות ד	2320
Ala lle val	232		тув РГС	2330		Arg		335
Ala Ser Thr	Ile Leu 2340	Arg Leu	Ile Phe		Val Gly	Leu	Gln P 2350	ro Thr
Leu Phe Leu 235	_	Ala Phe	Asn Va. 2360	l Cys	Asn Lys	Ile 2365		he Leu
Met Ser Phe 2370	Val Gly	Asn Cys 237	_	r Phe	Thr Arg 238		Tyr A	rg Ala
Met Val Leu 2385	Asp Val	Glu Phe 2390	Leu Ty	r His	Leu Leu 2395	Tyr	Leu L	eu Ile 2400
Cys Ala Met	Gly Leu		His Glu	ı Phe		Ser	Leu L	
m) - 3 - 7	240	-	Ol- mb-	2410		**- 7		415
Phe Asp Leu	val Tyr 2420	Arg Giu	242		Leu Asn	vai	2430	ys ser
Val Thr Arg 243		Arg Pro	Ile Ile 2440	e Leu	Thr Ala	Ala 2445		la Leu
Ile Leu Val 2450	Tyr Leu	Phe Ser 245		l Gly	Tyr Leu 246		Phe L	ys Asp
Asp Phe Ile	Tou Clu	17-7 7	7 x x T 01	-		_	71- 0	lv Pro
	neu Giu	_	Arg Let	ı Pro		Thr	Ala G	-
2465		2470			2475			2480
Glu Thr Gly	Glu Ser 248	2470 Leu Ala 5	Asn As _l	o Phe 2490	2475 Leu Tyr)	Ser	Asp V	2480 al Cys 495
	Glu Ser 248 Thr Gly	2470 Leu Ala 5	Asn Asp	Phe 2490 r Ser	2475 Leu Tyr)	Ser	Asp V	2480 al Cys 495
Glu Thr Gly	Glu Ser 248 Thr Gly 2500 Val Glu	2470 Leu Ala 5 Glu Asn	Asn Asp	o Phe 2490 r Ser 05	2475 Leu Tyr) Pro Ala	Ser Pro	Asp V 2 Lys G 2510 Thr C	2480 al Cys 495 lu Glu
Glu Thr Gly Arg Val Glu Leu Leu Pro	Glu Ser 248 Thr Gly 2500 Val Glu 5	2470 Leu Ala 5 Glu Asn Glu Thr	Asn Asp Cys The 250 Glu Glu 2520 Thr Val	Phe 2490 Ser O5 n Asp	2475 Leu Tyr) Pro Ala Lys Glu	Ser Pro His 2525 Gly	Asp V 2 Lys G 2510 Thr C	2480 al Cys 495 lu Glu ys Glu
Glu Thr Gly Arg Val Glu Leu Leu Pro 251 Thr Leu Leu 2530 Gly Gly Gly	Glu Ser 248 Thr Gly 2500 Val Glu 5 Met Cys	2470 Leu Ala 5 Glu Asn Glu Thr Ile Val 253 Asp Val	Asn Asp Cys The 250 Glu Glu 2520 Thr Val	o Phe 2490 r Ser 05 n Asp l Leu	2475 Leu Tyr) Pro Ala Lys Glu Ser His 254 Pro Ser	Ser Pro His 2525 Gly	Asp V 2 Lys G 2510 Thr C	2480 al Cys 495 lu Glu ys Glu rg Ser
Glu Thr Gly Arg Val Glu Leu Leu Pro 251 Thr Leu Leu 2530	Glu Ser 248 Thr Gly 2500 Val Glu 5 Met Cys Val Gly Ala Arg	2470 Leu Ala 5 Glu Asn Glu Thr Ile Val 253 Asp Val 2550 Val Ile	Asn Asp Cys Th: 250 Glu Gli 2520 Thr Va: 5	Phe 2490 r Ser 05 n Asp l Leu g Lys	2475 Leu Tyr) Pro Ala Lys Glu Ser His 254 Pro Ser 2555 Leu Phe	Ser Pro His 2529 Gly O Lys	Asp V 2 Lys G 2510 Thr C Leu A Glu G	2480 al Cys 495 lu Glu ys Glu rg Ser lu Pro 2560 et Val
Glu Thr Gly Arg Val Glu Leu Leu Pro 251 Thr Leu Leu 2530 Gly Gly Gly 2545	Glu Ser 248 Thr Gly 2500 Val Glu 5 Met Cys Val Gly Ala Arg 256 Val Leu	2470 Leu Ala 5 Glu Asn Glu Thr Ile Val 253 Asp Val 2550 Val Ile 5	Asn Asp Cys Th: 250 Glu Glu 2520 Thr Va: 5 Leu Arc Tyr Asp	Phe 2490 2490 2490 2490 2490 2490 2490 2490	2475 Leu Tyr Pro Ala Lys Glu Ser His 254 Pro Ser 2555 Leu Phe	Pro His 2525 Gly O Lys Phe	Asp V 2 Lys G 2510 Thr C Leu A Glu G Phe M 2 Asp T	2480 al Cys 495 lu Glu ys Glu rg Ser lu Pro 2560 et Val 575
Glu Thr Gly Arg Val Glu Leu Leu Pro 251 Thr Leu Leu 2530 Gly Gly Gly 2545 Leu Phe Ala	Glu Ser 248 Thr Gly 2500 Val Glu 5 Met Cys Val Gly Ala Arg 256 Val Leu 2580	2470 Leu Ala 5 Glu Asn Glu Thr Ile Val 253 Asp Val 2550 Val Ile 5 Asn Leu	Asn Asp Cys Th: 250 Glu Gli 2520 Thr Va: 5 Leu Arg Tyr Asp Ile Pho	Phe 2490 2490 2490 2570 2570 2570 2570 255	2475 Leu Tyr Pro Ala Lys Glu Ser His 254 Pro Ser 2555 Leu Phe Val Ile	Ser Pro His 2525 Gly O Lys Phe Ile	Asp V 2 Lys G 2510 Thr C Leu A Glu G Phe M 2 Asp T 2590	2480 al Cys 495 lu Glu ys Glu rg Ser lu Pro 2560 et Val 575 hr Phe

Thr Cys Phe Ile Cys Gly Leu Glu Arg Asp Lys Phe Asp Asn Lys Thr 2620 2615 Val Thr Phe Glu Glu His Ile Lys Glu Glu His Asn Met Trp His Tyr 2635 2630 Leu Cys Phe Ile Val Leu Val Lys Val Lys Asp Ser Thr Glu Tyr Thr 2650 2655 2645 Gly Pro Glu Ser Tyr Val Ala Glu Met Ile Arg Glu Arg Asn Leu Asp 2665 Trp Phe Pro Arg Met Arg Ala Met Ser Leu Val Ser Ser Asp Ser Glu 2685 2680 Gly Glu Gln Asn Glu Leu Arg Asn Leu Gln Glu Lys Leu Glu Ser Thr 2695 2700 Met Lys Leu Val Thr Asn Leu Ser Gly Gln Leu Ser Glu Leu Lys Asp 2715 2710 Gln Met Thr Glu Gln Arg Lys Gln Lys Gln Arg Ile Gly Leu Leu Gly 2725 2730 His Pro Pro His Met Asn Val Asn Pro Gln Gln Pro Ala 2745 2740

<210> 11

<211> 2710

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:/note =
 synthetic construct

Met Ser Asp Lys Met Ser Ser Phe Leu His Ile Gly Asp Ile Cys Ser 10 Leu Tyr Ala Glu Gly Ser Thr Asn Gly Phe Ile Ser Thr Leu Gly Leu Val Asp Asp Arg Cys Val Val Gln Pro Glu Ala Gly Asp Leu Asn Asn 40 Pro Pro Lys Lys Phe Arg Asp Cys Leu Phe Lys Leu Cys Pro Met Asn 55 Arg Tyr Ser Ala Gln Lys Gln Phe Trp Lys Ala Ala Lys Pro Gly Ala 70 75 Asn Ser Thr Thr Asp Ala Val Leu Leu Asn Lys Leu His His Ala Ala 90 85 Asp Leu Glu Lys Lys Gln Asn Glu Thr Glu Asn Arg Lys Leu Leu Gly 105 Thr Val Ile Gln Tyr Gly Asn Val Ile Gln Leu Leu His Leu Lys Ser 120 125 Asn Lys Tyr Leu Thr Val Asn Lys Arg Leu Pro Ala Leu Leu Glu Lys 140 135 Asn Ala Met Arg Val Thr Leu Asp Glu Ala Gly Asn Glu Gly Ser Trp 150 155 Phe Tyr Ile Gln Pro Phe Tyr Lys Leu Arg Ser Ile Gly Asp Ser Val 165 170 Val Ile Gly Asp Lys Val Val Leu Asn Pro Val Asn Ala Gly Gln Pro 185 Leu His Ala Ser Ser His Gln Leu Val Asp Asn Pro Gly Cys Asn Glu 200 Val Asn Ser Val Asn Cys Asn Thr Ser Trp Lys Ile Val Leu Phe Met 215 220 Lys Trp Ser Asp Asn Lys Asp Asp Ile Leu Lys Gly Gly Asp Val Val 235

Arg Leu Phe His Ala Glu Gln Glu Lys Phe Leu Thr Cys Asp Glu His 250 Arg Lys Lys Gln His Val Phe Leu Arg Thr Thr Gly Arg Gln Ser Ala 265 Thr Ser Ala Thr Ser Ser Lys Ala Leu Trp Glu Val Glu Val Val Gln 280 His Asp Pro Cys Arg Gly Gly Ala Gly Tyr Trp Asn Ser Leu Phe Arg 295 Phe Lys His Leu Ala Thr Gly His Tyr Leu Ala Ala Glu Val Asp Pro 310 315 Asp Phe Glu Glu Glu Cys Leu Glu Phe Gln Pro Ser Val Asp Pro Asp 325 330 Gln Asp Ala Ser Arg Ser Arg Leu Arg Asn Ala Gln Glu Lys Met Val 345 Tyr Ser Leu Val Ser Val Pro Glu Gly Asn Asp Ile Ser Ser Ile Phe 360 Glu Leu Asp Pro Thr Thr Leu Arg Gly Gly Asp Ser Leu Val Pro Arg 375 Asn Ser Tyr Val Arg Leu Arg His Leu Cys Thr Asn Thr Trp Val His 395 390 Ser Thr Asn Ile Pro Ile Asp Lys Glu Glu Lys Pro Val Met Leu 405 410 Lys Ile Gly Thr Ser Pro Leu Lys Glu Asp Lys Glu Ala Phe Ala Ile 420 425 Val Pro Val Ser Pro Ala Glu Val Arg Asp Leu Asp Phe Ala Asn Asp 440 445 Ala Ser Lys Val Leu Gly Ser Ile Ala Gly Lys Leu Glu Lys Gly Thr 455 Ile Thr Gln Asn Glu Arg Arg Ser Val Thr Lys Leu Leu Glu Asp Leu 470 475 Val Tyr Phe Val Thr Gly Gly Thr Asn Ser Gly Gln Asp Val Leu Glu 485 490 Val Val Phe Ser Lys Pro Asn Arg Glu Arg Gln Lys Leu Met Arg Glu 505 Gln Asn Ile Leu Lys Gln Ile Phe Lys Leu Leu Gln Ala Pro Phe Thr 520 525 Asp Cys Gly Asp Gly Pro Met Leu Arg Leu Glu Glu Leu Gly Asp Gln 535 540 Arg His Ala Pro Phe Arg His Ile Cys Arg Leu Cys Tyr Arg Val Leu 550 555 Arg His Ser Gln Gln Asp Tyr Arg Lys Asn Gln Glu Tyr Ile Ala Lys 570 Gln Phe Gly Phe Met Gln Lys Gln Ile Gly Tyr Asp Val Leu Ala Glu 585 Asp Thr Ile Thr Ala Leu Leu His Asn Asn Arg Lys Leu Leu Glu Lys 600 His Ile Thr Ala Ala Glu Ile Asp Thr Phe Val Ser Leu Val Arg Lys 615 Asn Arg Glu Pro Arg Phe Leu Asp Tyr Leu Ser Asp Leu Cys Val Ser 630 635 Met Asn Lys Ser Ile Pro Val Thr Gln Glu Leu Ile Cys Lys Ala Val 650 645 Leu Asn Pro Thr Asn Ala Asp Ile Leu Ile Glu Thr Lys Leu Val Leu 665 Ser Arg Phe Glu Phe Glu Gly Val Ser Thr Gly Glu Asn Ala Leu Glu 680 Ala Gly Glu Asp Glu Glu Glu Val Trp Leu Phe Trp Arg Asp Ser Asn 695 Lys Glu Ile Arg Ser Lys Ser Val Arg Glu Leu Ala Gln Asp Ala Lys 710 715

Glu Gly	Gln	Lys	Glu 725	Asp	Arg	Asp	Val	Leu 730	Ser	Tyr	Tyr	Arg	Tyr 735	Gln
Leu Asn	Leu	Phe 740	Ala	Arg	Met	Cys	Leu 745	Asp	Arg	Gln	Tyr	Leu 750	Ala	Ile
Asn Glu	1le 755	Ser	Gly	Gln	Leu	Asp 760	Val	Asp	Leu	Ile	Leu 765	Arg	Cys	Met
Ser Asp 770		Asn	Leu	Pro	Tyr 775	Asp	Leu	Arg	Ala	Ser 780	Phe	Cys	Arg	Leu
Met Leu 785				790					795					800
Val Lys			805					810					815	
Asp Asp		820					825					830		
Phe Ala	835					840					845			
Cys Gln 850					855					860				
Glu Val 865	vai	Asn	ьeu	870	Arg	ASII	ьеи	TTE	875	Pne	GIY	PHE	ıyı	880
Phe Ser	Asp	Leu	Leu 885		Leu	Thr	Lys	Ile 890		Leu	Ala	Ile	Leu 895	
Cys Val	His	Val 900		Thr	Ile	Phe	Pro 905		Ser	Lys	Met	Thr 910		Gly
Glu Glu	Asn 915	Lys	Gly	Ser	Asn	Val 920	Met	Arg	Ser	Ile	His 925	Gly	Val	Gly
Glu Leu 930		Thr	Gln	Val	Val 935	Leu	Arg	Gly	Gly	Gly 940	Phe	Leu	Pro	Met
Thr Pro				950			_		955					960
Glu Lys		_	965					970					975	
Ile Leu		980					985					990		
Leu Leu	995					1000)				1005	5		
Ser Glu 101 Pro Gly	.0			_	1019	5				1020	o			
1025 Phe Gly				1030)				1035	5				1040
1110 07	0-1		104						0					5
Gly Arg		106	0				106	5				1070	0	
Pro Pro	107	5				1080	0				1089	5		
Gln Arg	0				109	5				110	0			
Thr Ser				1110	C				1119	5				1120
Gln Leu			112	5				113	0				113	5
Gln Gly		114	0				114	5				115	0	
Lys Lys	115	5				1160	0				116	5		
Ser Ser 117 Lys Leu	70				117	5				118	0			
1185	. сув	vaı	2111	119		AIG	501	vaı	119	_	001		<i>_</i> 73	1200

	Leu Arg Asn 1205		1210		1215	5
Leu Leu Gln Ile 1220		Lys Ala 1225		Thr Lys	Met Gln 1230	Glu
Ile Met Arg Leu 1235	Ala His Glu	Phe Leu 1240	Gln Asn	Phe Cys 1245		Asn
Gln Gln Asn Gln 1250	Ala Leu Leu 125	_	His Ile	Asn Leu 1260	Phe Leu	Asn
Pro Gly Ile Leu 1265	1270		1275	5		1280
	1285		1290		1295	5
His Cys Ile Glu 1300		130	5		1310	
Gln Thr Ile Val 1315		1320		1325	5	
Met Val Met Ala 1330	133	5		1340		
Tyr Asn Asp Arg	1350		1359	5		1360
Glu Arg Asp Arg	1365		1370		1379	5
His Leu Val Glu 1380		138	5		1390	
Thr Glu Ile Lys 1395	_	1400		1409	5	
Val Val Thr His 1410	141	5		1420		
Asn Phe Leu Asn 1425	1430		1435	5		1440
Ile Tyr Thr Ser	1445	_	1450		1455	5
Asp Ile Cys Arg)	146	5		1470	
Ser Val Leu Glu 1475		1480		1489	5	
Thr Phe Phe Ser	149	5	Gln Ser	Thr Thr 1500	Leu Gin	Thr
Arg Gln Pro Val	Dhe Val Cln					_
1505	1510		151	5		1520
His Cys Asn Trp	1510 Leu Met Pro 1525	Ser Gln	151! Lys Ala 1530	Ser Val	Glu Ser 1535	1520 Cys 5
His Cys Asn Trp Ile Arg Val Leu 1540	1510 Leu Met Pro 1525 Ser Asp Val	Ser Gln Ala Lys	151! Lys Ala 1530 Ser Arg 5	Ser Val Ala Ile	Glu Ser 1535 Ala Ile 1550	1520 Cys 5 Pro
His Cys Asn Trp Ile Arg Val Leu 1540 Val Asp Leu Asp 1555	1510 Leu Met Pro 1525 Ser Asp Val Ser Gln Val	Ser Gln Ala Lys 154 Asn Asn 1560	1519 Lys Ala 1530 Ser Arg 5 Leu Phe	Ser Val Ala Ile Leu Lys 156	Glu Ser 1535 Ala Ile 1550 Ser His	1520 Cys 5 Pro Asn
His Cys Asn Trp Ile Arg Val Leu 1540 Val Asp Leu Asp 1555 Ile Val Gln Lys 1570	1510 Leu Met Pro 1525 Ser Asp Val Ser Gln Val Thr Ala Met 157	Ser Gln Ala Lys 154 Asn Asn 1560 Asn Trp	151: Lys Ala 1530 Ser Arg 5 Leu Phe Arg Leu	Ser Val Ala Ile Leu Lys 1569 Ser Ala 1580	Glu Ser 1535 Ala Ile 1550 Ser His 5 Arg Asn	1520 Cys 5 Pro Asn Ala
His Cys Asn Trp Ile Arg Val Leu 1540 Val Asp Leu Asp 1555 Ile Val Gln Lys 1570 Ala Arg Arg Asp 1585	1510 Leu Met Pro 1525 Ser Asp Val Ser Gln Val Thr Ala Met 157 Asp Val Leu 1590	Ala Lys 154 Asn Asn 1560 Asn Trp	151: Lys Ala 1530 Ser Arg 5 Leu Phe Arg Leu Ser Arg 159:	Ser Val Ala Ile Leu Lys 1569 Ser Ala 1580 Asp Tyr	Glu Ser 1535 Ala Ile 1550 Ser His 5 Arg Asn	1520 Cys Fro Asn Ala Ile 1600
His Cys Asn Trp Ile Arg Val Leu 1540 Val Asp Leu Asp 1555 Ile Val Gln Lys 1570 Ala Arg Arg Asp 1585 Ile Glu Arg Leu	1510 Leu Met Pro 1525 Ser Asp Val Ser Gln Val Thr Ala Met 157 Asp Val Leu 1590 Gln Asp Ile 1605	Ala Lys 154 Asn Asn 1560 Asn Trp Ala Ala Val Ser	Lys Ala 1530 Ser Arg Leu Phe Arg Leu Ser Arg 1599 Ala Leu 1610	Ser Val Ala Ile Leu Lys 1569 Ser Ala 1580 Asp Tyr Glu Asp	Glu Ser 1533 Ala Ile 1550 Ser His Arg Asn Arg Asn Arg Leu 1619	1520 Cys Fro Asn Ala Ile 1600 Arg
His Cys Asn Trp Ile Arg Val Leu 1540 Val Asp Leu Asp 1555 Ile Val Gln Lys 1570 Ala Arg Arg Asp 1585	1510 Leu Met Pro 1525 Ser Asp Val Ser Gln Val Thr Ala Met 157 Asp Val Leu 1590 Gln Asp Ile 1605 Ala Glu Leu	Ala Lys 154 Asn Asn 1560 Asn Trp Ala Ala Val Ser	Lys Ala 1530 Ser Arg Leu Phe Arg Leu Ser Arg 1599 Ala Leu 1610 Leu Val	Ser Val Ala Ile Leu Lys 1569 Ser Ala 1580 Asp Tyr Glu Asp	Glu Ser 1533 Ala Ile 1550 Ser His Arg Asn Arg Asn Arg Leu 1619	1520 Cys Fro Asn Ala Ile 1600 Arg
His Cys Asn Trp Ile Arg Val Leu 1540 Val Asp Leu Asp 1555 Ile Val Gln Lys 1570 Ala Arg Arg Asp 1585 Ile Glu Arg Leu Pro Leu Val Gln 1620 Pro Glu Leu Leu 1635	1510 Leu Met Pro 1525 Ser Asp Val Ser Gln Val Thr Ala Met 157 Asp Val Leu 1590 Gln Asp Ile 1605 Ala Glu Leu Phe Pro Glu	Ser Gln Ala Lys 154 Asn Asn 1560 Asn Trp Ala Ala Val Ser Ser Val 162 Asn Thr	Lys Ala 1530 Ser Arg 5 Leu Phe Arg Leu Ser Arg 1599 Ala Leu 1610 Leu Val 5 Asp Ala	Ser Val Ala Ile Leu Lys 1569 Ser Ala 1580 Asp Tyr Glu Asp Asp Val Arg Arg 1649	Glu Ser 1539 Ala Ile 1550 Ser His Arg Asn Arg Asn Arg Leu 1619 Leu His 1630 Lys Cys	1520 Cys Fro Asn Ala Ile 1600 Arg Arg Glu
His Cys Asn Trp Ile Arg Val Leu 1540 Val Asp Leu Asp 1555 Ile Val Gln Lys 1570 Ala Arg Arg Asp 1585 Ile Glu Arg Leu Pro Leu Val Gln 1620 Pro Glu Leu Leu	1510 Leu Met Pro 1525 Ser Asp Val Ser Gln Val Thr Ala Met 157 Asp Val Leu 1590 Gln Asp Ile 1605 Ala Glu Leu Phe Pro Glu Ile Cys Lys 165	Ser Gln Ala Lys 154 Asn Asn 1560 Asn Trp 5 Ala Ala Val Ser Ser Val 162 Asn Thr 1640 Leu Ile	Lys Ala 1530 Ser Arg 5 Leu Phe Arg Leu Ser Arg 1599 Ala Leu 1610 Leu Val 5 Asp Ala Lys His	Ser Val Ala Ile Leu Lys 1569 Ser Ala 1580 Asp Tyr Glu Asp Asp Val Arg Arg 1649 Thr Lys 1660	Glu Ser 1539 Ala Ile 1550 Ser His Arg Asn Arg Asn Arg Leu 1619 Leu His 1630 Lys Cys Gln Leu	1520 Cys Fro Asn Ala Ile 1600 Arg Arg Glu Leu

Glu Met Met '	Thr Lys <i>I</i> 1685	Asp Arg	Gly Ty:	Gly G 1690	lu Lys	Gly G	lu Ala 1695	
Arg Gln Ile	Leu Val <i>1</i> 1700	Asn Arg	Tyr Ty:	-	sn Ile		ro Ser 710	Gly
Arg Arg Glu 1715		Thr Ser	Phe Gly	/ Asn G	ly Pro	Leu Se 1725	er Pro	Gly
Gly Pro Ser	Lys Pro (Gly Gly	Gly Gl	/ Gly G	ly Pro	Gly S	er Gly	Ser
1730		1735	5		1740)		
Thr Ser Arg		Met Ser 1750	Leu Ala		al Gln .755	Cys H	is Leu	Asp 1760
Lys Glu Gly	Ala Ser <i>I</i> 1765	Asn Leu	Val Il	2 Asp L 1770	eu Ile	Met A	sn Ala 1775	
Ser Asp Arg	Val Phe E 1780	His Glu	Ser Il		eu Ala		la Leu 790	Leu
Glu Gly Gly . 1795		Thr Ile	Gln Hi 1800	s Ser P	he Phe	Cys A: 1805	rg Leu	Thr
Glu Asp Lys 1810	_	1815	5		1820)		
Lys Val Ala 1825		Glu Ile 1830	Lys Al		al Thr	Val A	sn Thr	Ser 1840
Asp Leu Gly	Asn Lys 1	Lys Lys	Asp As	o Glu V	al Asp	Arg A	sp Ala	Pro
	1845			1850			1855	
	1860		18	55		1	870	
Arg Asp Gln 1875			1880		_	1885		
Thr Phe Arg	Arg Glu A	Ala Asp 1895		Asp H	lis Tyr 1900		er Gly	Glu
Gly Thr Gln 1905	:	1910	_	1	L915			1920
Ala Val Ile	1925			1930			1935	5
	1940		19	45		1	950	
Asn Lys Thr 1955			1960			1965		
Cys Ile Cys 1970		1979	5		1980)		
Ile Asn Glu			Leu Il			Leu G	lu Ser	
1985		1990	a 17.2		L995	3 C	77.	2000
Thr Glu Tyr	2005			2010			2015	5
Thr His Glu	2020	gry rie	20		IIII AIA		16 Leu 030	ASII
Asp Ile Asn 2035	Pro Leu	Gly Lys			Asp Leu			Leu
Lys Asn Asn 2050		Lys Leu 2059	Leu Le	u Ala I	lle Met 2060		er Arg	His
Asp Ser Glu 2065							ro Lys	Glu 2080
Leu Val Glu	Val Ile 2	Lys Lys	Ala Ty	r Met 0 2090	Gln Gly	Glu V	al Glu 2095	
Glu Asp Gly		Gly Glu	Asp Gl 21	y Ala A	Ala Ser			
Gly His Asn 2115	Ile Tyr	Ile Leu			Leu Ala			Lys
Glu Leu Gln 2130		Leu Lys 213!	Pro Gl	y Gly G	Gln Val 2140	Asp G	ly Asp	Glu
Ala Leu Glu	Phe Tyr	Ala Lys	His Th	r Ala G	3ln Ile	Glu I	le Val	Arg

Leu Asp Arg Thr	2165		2170		2175
Glu Phe Leu Thr 218		Lys Leu 2185		Tyr Tyr	Thr Thr Glu 2190
Arg Asp Glu Gln 2195	Gly Ser Lys	Ile Asn 2200	Asp Phe	Phe Leu 2205	
Asp Leu Phe Asn 2210	Glu Met Asn 221	_	Lys Lys	Leu Arg 2220	Ala Gln Pro
Val Leu Tyr Trp 2225	2230		2235		2240
Phe Asn Leu Ala	2245		2250		2255
Phe Lys Gly Val 226	0	2265	5		2270
Leu Trp Thr Ala 2275	Met Leu Ile	Ser Leu 2280	Ala Ile	Val Ile 2285	
Lys Pro His Gly 2290	Ile Arg Ala 229		Ala Ser	Thr Ile 2300	Leu Arg Leu
Ile Phe Ser Val 2305	Gly Leu Gln 2310	Pro Thr	Leu Phe 2315		Gly Ala Phe 2320
Asn Val Cys Asn	Lys Ile Ile 2325	Phe Leu	Met Ser 2330	Phe Val	Gly Asn Cys 2335
Gly Thr Phe Thr 234		Arg Ala 2345		Leu Asp	Val Glu Phe 2350
Leu Tyr His Leu 2355	Leu Tyr Leu	Leu Ile 2360	Cys Ala	Met Gly 2365	
His Glu Phe Phe 2370	Tyr Ser Leu 237		Phe Asp	Leu Val 2380	Tyr Arg Glu
Glu Thr Leu Leu 2385			Val Thr 2395	Arg Asn	Gly Arg Pro 2400
Ile Ile Leu Thr		Ala Leu			
Ile Val Gly Tyr 242	Leu Phe Phe	Lys Asp 2425	Asp Phe	Ile Leu	Glu Val Asp 2430
Arg Leu Pro Asn 2435				Gly Glu 2445	Ser Leu Ala
Asn Asp Phe Leu 2450	Tyr Ser Asp	Val Cys	Arg Val		
Cys Thr Ser Pro			Leu Leu 2475	Pro Val	Glu Glu Thr 2480
Glu Gln Asp Lys		Cys Glu			
Thr Val Leu Ser 250	His Gly Leu	Arg Ser 2505	Gly Gly	Gly Val	
Leu Arg Lys Pro 2515				Ala Ala 252	Arg Val Ile
Tyr Asp Leu Leu 2530	Phe Phe Phe 253	Met Val	Ile Ile		
Ile Phe Gly Val 2545			Ala Asp 2555		Ser Glu Lys 2560
Gln Lys Lys Glu		Lys Thr	Thr Cys 2570	Phe Ile	Cys Gly Leu 2575
Glu Arg Asp Lys 258	Phe Asp Asn	Lys Thr 2585	Val Thr	Phe Glu	Glu His Ile 2590
Lys Glu Glu His 2595				Phe Ile 260	Val Leu Val
Lys Val Lys Asp 2610	Ser Thr Glu 261	Tyr Thr	Gly Pro		
Glu Met Ile Arg 2625			Trp Phe 2635	Pro Arg	Met Arg Ala 2640

<210> 12 <211> 2749 <212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:/note =
 synthetic construct

Met Ser Asp Lys Met Ser Ser Phe Leu His Ile Gly Asp Ile Cys Ser 10 Leu Tyr Ala Glu Gly Ser Thr Asn Gly Phe Ile Ser Thr Leu Gly Leu 20 25 Val Asp Asp Arg Cys Val Val Gln Pro Glu Ala Gly Asp Leu Asn Asn 40 Pro Pro Lys Lys Phe Arg Asp Cys Leu Phe Lys Leu Cys Pro Met Asn 55 Arg Tyr Ser Ala Gln Lys Gln Phe Trp Lys Ala Ala Lys Pro Gly Ala Asn Ser Thr Thr Asp Ala Val Leu Leu Asn Lys Leu His His Ala Ala Asp Leu Glu Lys Lys Gln Asn Glu Thr Glu Asn Arg Lys Leu Leu Gly 105 Thr Val Ile Gln Tyr Gly Asn Val Ile Gln Leu Leu His Leu Lys Ser 120 125 Asn Lys Tyr Leu Thr Val Asn Lys Arg Leu Pro Ala Leu Leu Glu Lys 135 Asn Ala Met Arg Val Thr Leu Asp Glu Ala Gly Asn Glu Gly Ser Trp 150 155 Phe Tyr Ile Gln Pro Phe Tyr Lys Leu Arg Ser Ile Gly Asp Ser Val 170 165 Val Ile Gly Asp Lys Val Val Leu Asn Pro Val Asn Ala Gly Gln Pro 185 180 Leu His Ala Ser Ser His Gln Leu Val Asp Asn Pro Gly Cys Asn Glu 200 205 Val Asn Ser Val Asn Cys Asn Thr Ser Trp Lys Ile Val Leu Phe Met 215 220 Lys Trp Ser Asp Asn Lys Asp Asp Ile Leu Lys Gly Gly Asp Val Val 230 235 Arg Leu Phe His Ala Glu Gln Glu Lys Phe Leu Thr Cys Asp Glu His 250 Arg Lys Lys Gln His Val Phe Leu Arg Thr Thr Gly Arg Gln Ser Ala 265 Thr Ser Ala Thr Ser Ser Lys Ala Leu Trp Glu Val Glu Val Val Gln 280 His Asp Pro Cys Arg Gly Gly Ala Gly Tyr Trp Asn Ser Leu Phe Arg 295

Phe 305	Lys	His	Leu	Ala	Thr 310	Gly	His	Tyr	Leu	Ala 315	Ala	Glu	Val	Asp	Pro 320
Asp	Phe	Glu	Glu	Glu 325	Cys	Leu	Glu	Phe	Gln 330	Pro	Ser	Val	Asp	Pro 335	Asp
Gln	Asp	Ala	Ser 340	Arg	Ser	Arg	Leu	Arg 345	Asn	Ala	Gln	Glu	Lys 350	Met	Val
Tyr	Ser	Leu 355	Val	Ser	Val	Pro	Glu 360	Gly	Asn	Asp	Ile	Ser 365	Ser	Ile	Phe
Glu	Leu 370	Asp	Pro	Thr	Thr	Leu 375	Arg	Gly	Gly	Asp	Ser 380	Leu	Val	Pro	Arg
385					390					395				Val	400
				405					410					Met 415	
Lys	Ile	Gly	Thr 420	Ser	Pro	Leu	Lys	Glu 425	Asp	Lys	Glu	Ala	Phe 430	Ala	Ile
		435					440					445		Asn	
	450	_			_	455			_	-	460			Gly	
465					470					475				Asp	480
				485					490					Leu 495	
			500	_				505	_				510	Arg	
		515					520					525		Phe	
_	530	-	_	_		535					540			Asp	
545					550					555				Val	560
				565					570					Ala 575	
		_	580					585					590	Ala	
_		595			Leu	Leu		Asn	Asn	Arg	Lys	Leu 605	Leu	Glu	Lys
		Thr			_	_	600						_		
700	610					615	Asp				620	Leu		Arg	
625	Arg	Glu	Pro	Arg	Phe 630	615 Leu	Asp Asp	Tyr	Leu	Ser 635	620 Asp	Leu	Cys	Val	Ser 640
625 Met	Arg Asn	Glu Lys	Pro Ser	Arg Ile 645	Phe 630 Pro	615 Leu Val	Asp Asp Thr	Tyr Gln	Leu Glu 650	Ser 635 Leu	620 Asp Ile	Leu Leu Cys	Cys	Val Ala 655	Ser 640 Val
625 Met Leu	Arg Asn Asn	Glu Lys Pro	Pro Ser Thr	Arg Ile 645 Asn	Phe 630 Pro Ala	615 Leu Val Asp	Asp Asp Thr	Tyr Gln Leu 665	Leu Glu 650 Ile	Ser 635 Leu Glu	620 Asp Ile Thr	Leu Leu Cys Lys	Cys Lys Leu 670	Val Ala 655 Val	Ser 640 Val Leu
625 Met Leu Ser	Arg Asn Asn Arg	Glu Lys Pro Phe 675	Pro Ser Thr 660 Glu	Arg Ile 645 Asn Phe	Phe 630 Pro Ala Glu	615 Leu Val Asp Gly	Asp Thr Ile Val	Tyr Gln Leu 665 Ser	Leu Glu 650 Ile Thr	Ser 635 Leu Glu Gly	620 Asp Ile Thr Glu	Leu Leu Cys Lys Asn 685	Cys Lys Leu 670 Ala	Val Ala 655 Val Leu	Ser 640 Val Leu Glu
625 Met Leu Ser Ala	Arg Asn Asn Arg Gly 690	Glu Lys Pro Phe 675 Glu	Pro Ser Thr 660 Glu Asp	Arg Ile 645 Asn Phe Glu	Phe 630 Pro Ala Glu	615 Leu Val Asp Gly Glu 695	Asp Thr Ile Val 680 Val	Tyr Gln Leu 665 Ser Trp	Leu Glu 650 Ile Thr	Ser 635 Leu Glu Gly Phe	620 Asp Ile Thr Glu Trp 700	Leu Leu Cys Lys Asn 685 Arg	Cys Lys Leu 670 Ala Asp	Val Ala 655 Val Leu Ser	Ser 640 Val Leu Glu Asn
625 Met Leu Ser Ala Lys 705	Arg Asn Asn Arg Gly 690 Glu	Glu Lys Pro Phe 675 Glu Ile	Pro Ser Thr 660 Glu Asp	Arg Ile 645 Asn Phe Glu Ser	Phe 630 Pro Ala Glu Glu Lys 710	615 Leu Val Asp Gly Glu 695 Ser	Asp Thr Ile Val 680 Val	Tyr Gln Leu 665 Ser Trp Arg	Leu Glu 650 Ile Thr Leu Glu	Ser 635 Leu Glu Gly Phe Leu 715	620 Asp Ile Thr Glu Trp 700 Ala	Leu Leu Cys Lys Asn 685 Arg	Cys Lys Leu 670 Ala Asp	Val Ala 655 Val Leu Ser Ala	Ser 640 Val Leu Glu Asn Lys 720
625 Met Leu Ser Ala Lys 705	Arg Asn Asn Arg Gly 690 Glu	Glu Lys Pro Phe 675 Glu Ile	Pro Ser Thr 660 Glu Asp	Arg Ile 645 Asn Phe Glu Ser	Phe 630 Pro Ala Glu Glu Lys 710	615 Leu Val Asp Gly Glu 695 Ser	Asp Thr Ile Val 680 Val	Tyr Gln Leu 665 Ser Trp Arg	Leu Glu 650 Ile Thr Leu Glu	Ser 635 Leu Glu Gly Phe Leu 715	620 Asp Ile Thr Glu Trp 700 Ala	Leu Leu Cys Lys Asn 685 Arg	Cys Lys Leu 670 Ala Asp	Val Ala 655 Val Leu Ser	Ser 640 Val Leu Glu Asn Lys 720
625 Met Leu Ser Ala Lys 705 Glu	Arg Asn Arg Gly 690 Glu Gly	Glu Lys Pro Phe 675 Glu Ile Gln	Pro Ser Thr 660 Glu Asp Arg Lys	Arg Ile 645 Asn Phe Glu Ser Glu 725	Phe 630 Pro Ala Glu Glu Lys 710 Asp	Clu C95 Ser Arg	Asp Thr Ile Val 680 Val Val Asp	Tyr Gln Leu 665 Ser Trp Arg Val	Leu Glu 650 Ile Thr Leu Glu Leu 730	Ser 635 Leu Glu Gly Phe Leu 715 Ser	620 Asp Ile Thr Glu Trp 700 Ala Tyr	Leu Leu Cys Lys Asn 685 Arg Gln	Cys Lys Leu 670 Ala Asp Asp	Val Ala 655 Val Leu Ser Ala Tyr	Ser 640 Val Leu Glu Asn Lys 720 Gln
625 Met Leu Ser Ala Lys 705 Glu Leu	Arg Asn Arg Gly 690 Glu Gly Asn	Glu Lys Pro Phe 675 Glu Ile Gln Leu	Pro Ser Thr 660 Glu Asp Arg Lys	Arg Ile 645 Asn Phe Glu Ser Glu 725 Ala	Phe 630 Pro Ala Glu Glu Lys 710 Asp	615 Leu Val Asp Gly Glu 695 Ser Arg	Asp Thr Ile Val 680 Val Val Asp Cys	Tyr Gln Leu 665 Ser Trp Arg Val Leu 745	Leu Glu 650 Ile Thr Leu Glu Leu 730 Asp	Ser 635 Leu Glu Gly Phe Leu 715 Ser	620 Asp Ile Thr Glu Trp 700 Ala Tyr	Leu Leu Cys Lys Asn 685 Arg Gln Tyr	Cys Lys Leu 670 Ala Asp Asp Arg Leu 750	Val Ala 655 Val Leu Ser Ala Tyr 735	Ser 640 Val Leu Glu Asn Lys 720 Gln

785	.eu	His	Met	His	Val 790	Asp	Arg	Asp	Pro	Gln 795	Glu	Gln	Val	Thr	Pro 800
Val L	ys	Tyr	Ala	Arg 805		Trp	Ser	Glu	Ile 810	Pro	Ser	Glu	Ile	Ala 815	Ile
Asp A	sp	Tyr	Asp 820	Ser	Ser	Gly	Ala	Ser 825		Asp	Glu	Ile	Lys 830	Glu	Arg
Phe A	la	Gln 835	Thr	Met	Glu	Phe	Val 840	Glu	Glu	Tyr	Leu	Arg 845	Asp	Val	Val
	350					855					860				
Glu V 865					870					875					880
Phe S				885					890					895	
Cys V			900					905					910		
Glu G		915					920					925			
-	30					935					940				
Thr P					950					955					960
Glu L				965					970					975	
Ile L			980					985					990		
Leu L		995					1000)				1009	5		
	010)				1015	5				1020)			
Pro G	Зlу	Ala	Leu	Asp			His	Ile	Glu	Glu		Ala	Glu	Gly	
1025					1030					1035					1040
Phe G	-	-		1045	Glu 5	Asn			1050	Asp O	Leu		_	105	Gly 5
Phe G	- Arg	Thr	Phe 1060	1045 Leu)	Glu S Arg	Asn Val	Leu	Leu 1065	1050 His	Asp) Leu	Leu Thr	Met	His	105! Asp)	Gly 5 Tyr
Phe G	Arg Pro	Thr Leu	Phe 1060 Val	1045 Leu) Ser	Glu Arg Gly	Asn Val Ala	Leu Leu 1080	Leu 1065 Gln	1050 His Leu	Asp) Leu Leu	Leu Thr Phe	Met Arg	His 1070 His	1055 Asp) Phe	Gly Tyr Ser
Phe Gly A	Arg Pro Arg	Thr Leu 1075 Gln	Phe 1060 Val Glu	1045 Leu) Ser Val	Glu Arg Gly Leu	Asn Val Ala Gln 1099	Leu Leu 1080 Ala	Leu 1065 Gln) Phe	1050 His Leu Lys	Asp Leu Leu Gln	Leu Thr Phe Val	Met Arg 108! Gln	His 1070 His Leu	105! Asp) Phe Leu	Gly Tyr Ser Val
Phe Gly A Pro F Gln A Thr S 1105	Arg Pro Arg 1090 Ser	Thr Leu 1075 Gln) Gln	Phe 1060 Val Glu Asp	1045 Leu Ser Val	Glu Arg Gly Leu Asp	Val Ala Gln 1099 Asn	Leu Leu 1080 Ala Tyr	Leu 1065 Gln) Phe Lys	1050 His Leu Lys Gln	Asp Leu Leu Gln Ile	Leu Thr Phe Val 1100 Lys	Met Arg 108! Gln Gln	His 1070 His Leu Asp	105! Asp Phe Leu Leu	Gly Tyr Ser Val Asp
Phe Gly A Pro F Gln A Thr S 1105 Gln I	Arg Pro Arg 1090 Ser Leu	Thr Leu 1075 Gln Gln Arg	Phe 1060 Val Glu Asp	Leu Ser Val Val Ile	Glu Arg Gly Leu Asp 1110 Val	Asn Val Ala Gln 1099 Asn Clu	Leu Leu 1080 Ala Tyr	Leu 1065 Gln Phe Lys	Leu Lys Glu 1130	Asp Leu Leu Gln Ile 1119 Leu	Leu Thr Phe Val 1100 Lys Trp	Met Arg 1089 Gln Gln Val	His 1070 His Leu Asp	Asp Phe Leu Leu Lys 113	Gly Tyr Ser Val Asp 1120 Gly
Phe Gly A Pro F Gln A 1105 Gln I Gln G	Arg Pro Arg 1090 Ser Leu	Thr Leu 1079 Gln Gln Arg	Phe 1060 Val 5 Glu Asp Ser Asp	1045 Leu Ser Val Val Ile 1125 Glu	Glu Arg Gly Leu Asp 1110 Val Pro	Asn Val Ala Gln 1099 Asn Glu Met	Leu 1080 Ala Tyr Lys	Leu 1065 Gln Phe Lys Ser Gly 1145	Leu Lys Gln Glu 1130	Asp Leu Leu Gln Ile 1119 Leu Ser	Leu Thr Phe Val 1100 Lys Trp Gly	Met Arg 1089 Gln Gln Val	His 1070 His Leu Asp Tyr Asn 1150	105! Asp Phe Leu Leu Lys 113! Glu	Gly Tyr Ser Val Asp 1120 Gly His
Phe G Gly A Pro F Gln A 1105 Gln I Gln G	Arg Pro Arg 1090 Ser Leu Sly	Thr Leu 1075 Gln Gln Arg Pro Thr 1155	Phe 1060 Val Glu Asp Ser Asp 1140 Glu	1045 Leu Ser Val Val Ile 1125 Glu Glu	Glu Arg Gly Leu Asp 1110 Val Pro Gly	Asn Val Ala Gln 1099 Asn Glu Met Thr	Leu 1080 Ala Tyr Lys Asp Ser 1160	Leu 1065 Gln Phe Lys Ser Gly 1145 Lys	Leu Lys Gln Glu 1130 Ala	Asp Leu Leu Gln Ile 1119 Leu Ser	Leu Thr Phe Val 1100 Lys Trp Gly Lys	Met Arg 1089 Gln Gln Val Glu His 1169	His 1070 His Leu Asp Tyr Asn 1150 Glu	105: Asp Phe Leu Leu Lys 113: Glu Ser	Gly Tyr Ser Val Asp 1120 Gly His
Phe G Gly A Pro F Gln A 1105 Gln I Gln G Lys I Ser S	Arg Pro Arg 1090 Ser Leu Sly	Thr Leu 1075 Gln Gln Arg Pro Thr 1155	Phe 1060 Val Glu Asp Ser Asp 1140 Glu	1045 Leu Ser Val Val Ile 1125 Glu Glu	Glu Arg Gly Leu Asp 1110 Val Pro Gly	Asn Val Ala Gln 1099 Asn Glu Met Thr	Leu 1080 Ala Tyr Lys Asp Ser 1160 Val	Leu 1065 Gln Phe Lys Ser Gly 1145 Lys	Leu Lys Gln Glu 1130 Ala	Asp Leu Leu Gln Ile 1119 Leu Ser	Leu Thr Phe Val 1100 Lys Trp Gly Lys	Met Arg 1089 Gln Gln Val Glu His 1169	His 1070 His Leu Asp Tyr Asn 1150 Glu	105: Asp Phe Leu Leu Lys 113: Glu Ser	Gly Tyr Ser Val Asp 1120 Gly His
Phe G Gly A Pro F Gln A 1105 Gln I Gln G Lys I Ser S	Arg Pro Arg L090 Ser Leu Sly Lys Ser	Thr Leu 1075 Gln Gln Arg Pro Thr 1155 Tyr	Phe 1060 Val Glu Asp Ser Asp 1140 Glu Asn	1045 Leu Ser Val Val Ile 1125 Glu) Glu	Glu Arg Gly Leu Asp 1110 Val Pro Gly Arg	Asn Val Ala Gln 1099 Asn Glu Met Thr Val 1179 Ser	Leu 1086 Ala 5 Tyr Lys Asp Ser 1166 Val	Leu 1065 Gln Phe Lys Ser Gly 1145 Lys	Leu Lys Gln Glu 1130 Ala Fro	Asp Leu Leu Gln Ile 1119 Leu Ser Leu	Leu Thr Phe Val 1100 Lys Trp Gly Lys Leu 1180 Lys	Met Arg 1089 Gln Gln Val Glu His 1169 Ile	His 1070 His Leu Asp Tyr Asn 1150 Glu Arg	105: Asp Phe Leu Lys 113: Glu Ser Leu	Gly Tyr Ser Val Asp 1120 Gly This Thr
Phe G Gly A Pro F Gln A 1105 Gln I Gln G Lys I Ser S 11 Lys I	Arg Pro Arg 1090 Ger Leu 1170 Leu	Thr Leu 1075 Gln Gln Arg Pro Thr 1155 Tyr Cys	Phe 1060 Val Glu Asp Ser Asp 1140 Glu Asn	1045 Leu Ser Val Val Ile 1125 Glu Tyr Gln	Glu Arg Gly Leu Asp 1110 Val Fro Gly Arg Glu 1190 Arg	Asn Val Ala Gln 1099 Asn Glu Met Thr Val 1179 Ser	Leu 1080 Ala Tyr Lys Asp Ser 1160 Val	Leu 1065 Gln Phe Lys Ser Gly 1145 Lys Lys	Leu Lys Gln Glu 1130 Ala Fro Glu Val	Leu Gln Ile 1115 Leu Ser Leu Ile Arg 1195 His	Leu Thr Phe Val 1100 Lys Trp Gly Lys Leu 1180 Lys	Met Arg 1089 Gln Gln Val Glu His 1169 Ile Ser	His 1070 His Leu Asp Tyr Asn 1150 Glu Arg	105: Asp Phe Leu Lys 113: Glu Ser Leu Lys	Gly Tyr Ser Val Asp 1120 Gly His Thr Ser Gln 1200 Glu
Phe G Gly A Pro F Gln A 1105 Gln I Gln G Lys I Lys I 1185	Arg Pro Arg 1090 Ger Leu Lys Lys Leu Lin	Thr Leu 1075 Gln Gln Arg Pro Thr 1155 Tyr Cys	Phe 1060 Val Glu Asp Ser Asp 1140 Glu Asn Val	loue Leu Ser Val Val Ile 1125 Glu Glu Tyr Gln Leu 1205 Pro	Glu Arg Gly Leu Asp 1110 Val Fro Gly Arg Glu 1190 Arg	Asn Val Ala Gln 1099 Asn Glu Met Thr Val 1179 Ser Asn	Leu 1080 Ala Tyr Lys Asp Ser 1160 Val Ala Met	Leu 1065 Gln Phe Lys Ser Gly 1145 Lys Lys Ser Gly	Leu Lys Gln Glu 1130 Ala Fro Glu Val Ala 1210 Glu	Asp Leu Leu Gln Ile 1115 Leu Ser Leu Arg 1195 His	Leu Thr Phe Val 1100 Lys Trp Gly Lys Leu 1180 Lys Ala	Met Arg 1089 Gln Gln Val Glu His 1169 Ser Val	His 1070 His Leu Asp Tyr Asn 1150 Glu Arg Arg	Asp Phe Leu Lys 113! Glu Ser Leu Lys Lys Leu Lys	Gly Tyr Ser Val Asp 1120 Gly Thr Ser Gln 1200 Glu
Phe G Gly A Pro F Gln A 1105 Gln I Gln G Lys I 1185 Gln G	Arg Pro Arg L090 Ger Leu Sly Lys Ger Leu Lys Lys Lys Leu Leu Leu	Thr Leu 1075 Gln Gln Arg Pro Thr 1155 Tyr Cys Arg Gln	Phe 1060 Val Glu Asp Ser Asp 1140 Glu Asn Val Leu Ile 1220 Leu	IO45 Leu Ser Val Val Ile 1125 Glu Glu Tyr Gln Leu 1205 Pro	Glu Arg Gly Leu Asp 1110 Val Fro Gly Arg Glu 1190 Arg Tyr	Asn Val Ala Gln 1099 Asn Glu Met Thr Val 1179 Ser Asn Glu	Leu Leu 1080 Ala Tyr Lys Asp Ser 1160 Val Ala Met Lys	Leu 1065 Gln Phe Lys Ser Gly 1145 Lys Ser Gly Ala 1225 Leu	Leu Lys Gln Glu 1130 Ala Fro Glu Val Ala 1210 Glu Glu	Leu Gln Ile 1115 Leu Ser Leu Arg 1199 His Asp	Leu Thr Phe Val 1100 Lys Trp Gly Lys Leu 1180 Lys Ala Thr	Met Arg 1089 Gln Val Glu His 1169 Ile O Ser Val Lys	His 1070 His Leu Asp Tyr Asn 1150 Glu Arg Val Met 1230 Ala	Asp Phe Leu Lys 1139 Ser Leu Lys Lys Leu Con Lys Leu Lys	Gly Tyr Ser Val Asp 1120 Gly Thr Ser Gln 1200 Glu Glu

Pro Glv Ile	_		_	_	_	_		_
1265	Leu Glu	Ala Val 1270	Thr Met	Gln His		Phe N	Met Ası	n Asn 1280
Phe Gln Leu	Cys Ser	Glu Ile	Asn Glu			Gln F	His Phe	e Val
His Cys Ile			Arg Asn	Val Gln	Tyr			
Gln Thr Ile	Val Lys	Ala Glu				Lys (1325	Cys Gl	n Asp
Met Val Met 1330	Ala Glu	Leu Val		Gly Glu	Asp 1340		Leu Vai	l Phe
Tyr Asn Asp 1345	_	1350		135	5			1360
Glu Arg Asp	1369	5		1370			13'	75
His Leu Val	1380		138	5		1	1390	
Thr Glu Ile 1395	5		1400			1405		
Val Val Thr 1410		1419	5		1420			
Asn Phe Leu 1425	Asn His	1430	vai Asp	143		GIU r	мес Бу	1440
Ile Tyr Thr	144	5		1450			14	55
Asp Ile Cys	1460	_	146	5	_		1470	_
Ser Val Leu 1475	5	_	1480			1485		
Thr Phe Phe 1490		1495	5		1500			
Arg Gln Pro 1505	Val Phe		Leu Leu	_		Phe A	Arg Va	l Tyr
		1510		151				1520
His Cys Asn	152	Met Pro		Lys Ala 1530	Ser		15	r Cys 35
His Cys Asn Ile Arg Val	152! Leu Ser 1540	Met Pro 5 Asp Val	Ala Lys 154	Lys Ala 1530 Ser Arg 5	Ser Ala	Ile A	15: Ala Il 1550	r Cys 35 e Pro
His Cys Asn	1525 Leu Ser 1540 Asp Ser	Met Pro 5 Asp Val	Ala Lys 154	Lys Ala 1530 Ser Arg 5	Ser Ala Leu	Ile A	15: Ala Il 1550	r Cys 35 e Pro
His Cys Asn Ile Arg Val Val Asp Leu 1555 Ile Val Gln 1570	1529 Leu Ser 1540 Asp Ser 5 Lys Thr	Met Pro Asp Val Gln Val Ala Met 1579	Ala Lys 154 Asn Asn 1560 Asn Trp	Lys Ala 1530 Ser Arg 5 Leu Phe Arg Leu	Ser Ala Leu Ser 1580	Ile A Eys S 1565 Ala A	15: Ala Ilo 1550 Ser Hi: Arg As:	r Cys 35 e Pro s Asn
His Cys Asn Ile Arg Val Val Asp Leu 1555 Ile Val Gln	1529 Leu Ser 1540 Asp Ser 5 Lys Thr	Met Pro Asp Val Gln Val Ala Met 1579	Ala Lys 154 Asn Asn 1560 Asn Trp	Lys Ala 1530 Ser Arg 5 Leu Phe Arg Leu	Ser Ala Leu Ser 1580 Asp	Ile A Eys S 1565 Ala A	15: Ala Ilo 1550 Ser Hi: Arg As:	r Cys 35 e Pro s Asn
His Cys Asn Ile Arg Val Val Asp Leu 1555 Ile Val Gln 1570 Ala Arg Arg	1529 Leu Ser 1540 Asp Ser Lys Thr	Met Pro Asp Val Gln Val Ala Met 1575 Val Leu 1590 Asp Ile	Ala Lys 154 Asn Asn 1560 Asn Trp 5	Lys Ala 1530 Ser Arg 5 Leu Phe Arg Leu Ser Arg	Ser J Ala Leu Ser 1580 J Asp	Ile A Lys S 1565 Ala A	15: Ala Il 1550 Ser Hi Arg As:	r Cys 35 e Pro s Asn n Ala n Ile 1600 u Arg
His Cys Asn Ile Arg Val Val Asp Leu 1555 Ile Val Gln 1570 Ala Arg Arg 1585	Lys Thr Asp Asp Leu Gln 1609	Met Pro Asp Val Gln Val Ala Met 1575 Val Leu 1590 Asp Ile	Ala Lys 154 Asn Asn 1560 Asn Trp 5 Ala Ala	Lys Ala 1530 Ser Arg Leu Phe Arg Leu Ser Arg 159 Ala Leu 1610 Leu Val	Ala Leu Ser 1580 Asp 5	Ile A : Lys S 1565 Ala A Tyr A Asp A	15: Ala Ilo 1550 Ser Hi Arg As: Arg As: Arg Le	r Cys 35 e Pro s Asn n Ala n Ile 1600 u Arg
His Cys Asn Ile Arg Val Val Asp Leu 1555 Ile Val Gln 1570 Ala Arg Arg 1585 Ile Glu Arg	Leu Ser 1540 Asp Ser 5 Lys Thr Asp Asp Leu Gln 1600 Gln Ala 1620 Leu Phe	Met Pro Asp Val Gln Val Ala Met 1579 Val Leu 1590 Asp Ile Glu Leu	Ala Lys 154 Asn Asn 1560 Asn Trp Ala Ala Val Ser Ser Val 162	Lys Ala 1530 Ser Arg 5 Leu Phe Arg Leu Ser Arg 159 Ala Leu 1610 Leu Val	Ser Ala Leu Ser 1580 Asp G Asp	Ile A : Lys S 1565 Ala A Tyr A Asp A	Ala Ilo Ala Ilo 1550 Ser Hi: Arg As: Arg As: 16 Leu Hi 1630	r Cys 35 e Pro s Asn n Ala n Ile 1600 u Arg 15 s Arg
His Cys Asn Ile Arg Val Val Asp Leu 1555 Ile Val Gln 1570 Ala Arg Arg 1585 Ile Glu Arg Pro Leu Val Pro Glu Leu 1633 Ser Gly Gly 1650	Leu Ser 1540 Asp Ser Lys Thr Asp Asp Leu Gln 1600 Gln Ala 1620 Leu Phe Phe Ile	Met Pro Asp Val Gln Val Ala Met 1579 Val Leu 1590 Asp Ile Glu Leu Pro Glu Cys Lys 1659	Ala Lys 154 Asn Asn 1560 Asn Trp Ala Ala Val Ser Ser Val 162 Asn Thr 1640 Leu Ile	Lys Ala 1530 Ser Arg Leu Phe Arg Leu Ser Arg 159 Ala Leu 1610 Leu Val 5 Asp Ala Lys His	Ser Ala Leu Ser 1580 Asp Glu Asp Arg Thr 1660	Ile A Lys S 1565 Ala A Tyr A Asp A Val 1 Arg 1 1645 Lys G	Ala Ile 1550 Ser His Arg Ass Arg Ass Arg Le 16 Leu Hi 1630 Lys Cy	r Cys 35 e Pro s Asn h Ala h Ile 1600 u Arg 15 s Arg s Glu u Leu
His Cys Asn Ile Arg Val Val Asp Leu 1555 Ile Val Gln 1570 Ala Arg Arg 1585 Ile Glu Arg Pro Leu Val Pro Glu Leu 1633 Ser Gly Gly	Leu Ser 1540 Asp Ser Lys Thr Asp Asp Leu Gln 1600 Gln Ala 1620 Leu Phe Phe Ile	Met Pro Asp Val Gln Val Ala Met 1579 Val Leu 1590 Asp Ile Glu Leu Pro Glu Cys Lys 1659	Ala Lys 154 Asn Asn 1560 Asn Trp Ala Ala Val Ser Ser Val 162 Asn Thr 1640 Leu Ile	Lys Ala 1530 Ser Arg Leu Phe Arg Leu Ser Arg 159 Ala Leu 1610 Leu Val 5 Asp Ala Lys His	Ser J Ala Leu J Ser J 1580 J Asp J Glu Asp J Arg J Arg J Thr J 1660 Leu	Ile A Lys S 1565 Ala A Tyr A Asp A Val 1 Arg 1 1645 Lys G	Ala Ile 1550 Ser His Arg Ass Arg Ass Arg Le 16 Leu Hi 1630 Lys Cy	r Cys 35 e Pro s Asn h Ala h Ile 1600 u Arg 15 s Arg s Glu u Leu
His Cys Asn Ile Arg Val Val Asp Leu 1555 Ile Val Gln 1570 Ala Arg Arg 1585 Ile Glu Arg Pro Leu Val Pro Glu Leu 1633 Ser Gly Gly 1650 Glu Glu Asn	Leu Ser 1540 Asp Ser Lys Thr Asp Asp Leu Gln 1600 Gln Ala 1620 Leu Phe Phe Ile Glu Glu	Met Pro Asp Val Ala Met 1579 Val Leu 1590 Asp Ile Glu Leu Pro Glu Cys Lys 1659 Lys Leu 1670 Asp Arg	Ala Lys 154 Asn Asn 1560 Asn Trp Ala Ala Val Ser Ser Val 162 Asn Thr 1640 Leu Ile Cys Ile	Lys Ala 1530 Ser Arg 5 Leu Phe Arg Leu Ser Arg 159 Ala Leu 1610 Leu Val 5 Asp Ala Lys His	Ser JAla Leu Ser 1580 JAsp S Glu Asp Arg Thr 1660 Leu	Ile A Lys S 1565 Ala A Tyr A Asp A Val 1 Arg 1 1645 Lys G	Ala Ila 1550 Ser Hi Arg As: Arg As: 16 Leu Hi 1630 Lys Cy Gln Le	r Cys 35 e Pro s Asn h Ala h Ile 1600 h Arg 15 s Arg s Glu h Leu h Arg 1680 r Ile
His Cys Asn Ile Arg Val Val Asp Leu 1555 Ile Val Gln 1570 Ala Arg Arg 1585 Ile Glu Arg Pro Leu Val Pro Glu Leu 1633 Ser Gly Gly 1650 Glu Glu Asn 1665	Leu Ser 1540 Asp Ser Lys Thr Asp Asp Leu Gln 1600 Gln Ala 1620 Leu Phe Clu Glu Glu Thr Lys 1680	Met Pro Asp Val Gln Val Ala Met 1579 Asp Ile Glu Leu Pro Glu Cys Lys 1659 Lys Leu 1670 Asp Arg	Ala Lys 154 Asn Asn 1560 Asn Trp Ala Ala Val Ser Ser Val 162 Asn Thr 1640 Leu Ile Cys Ile Gly Tyr	Lys Ala 1530 Ser Arg 5 Leu Phe Arg Leu Ser Arg 159 Ala Leu 1610 Leu Val 5 Asp Ala Lys His Lys Val 167 Gly Glu 1690 Gln Pro	Ser JAla Leu Ser J580 JAsp J5 JGlu Asp Arg Thr 1660 Leu J5 Lys	Ile A Lys S 1565 Ala A Tyr A Asp A Val I 1645 Lys G Gln G Glu A	Ala Ila 1550 Ser Hi Arg As: Arg As: Arg Le 16 Leu Hi 1630 Lys Cy Gln Le Thr Le Ile Se 16	r Cys 35 e Pro s Asn h Ala h Ile 1600 h Arg 15 s Arg s Glu h Leu h Arg 1680 r Ile 95
His Cys Asn Ile Arg Val Val Asp Leu 1555 Ile Val Gln 1570 Ala Arg Arg 1585 Ile Glu Arg Pro Leu Val Pro Glu Leu 1635 Ser Gly Gly 1650 Glu Glu Asn 1665 Glu Met Met	Leu Ser 1540 Asp Ser Lys Thr Asp Asp Leu Gln 1600 Gln Ala 1620 Leu Phe Clu Glu Thr Lys 1680 Glu Asn 1700 Glu Leu	Met Pro Asp Val Gln Val Ala Met 1579 Asp Ile Glu Leu Pro Glu Cys Lys 1659 Lys Leu 1670 Asp Arg Ala Glu	Ala Lys 154 Asn Asn 1560 Asn Trp Ala Ala Val Ser Ser Val 162 Asn Thr 1640 Leu Ile Cys Ile Gly Tyr Leu Pro 170	Lys Ala 1530 Ser Arg 5 Leu Phe Arg Leu Ser Arg 159 Ala Leu 1610 Leu Val 5 Asp Ala Lys His Lys Val 167 Gly Glu 1690 Gln Pro	Ser Ala Leu Ser 1580 Asp Glu Asp Arg Thr 1660 Leu 5	Ile A Lys S 1565 Ala A Tyr A Asp A Val I 1645 Lys G Gln G Glu A Glu A	Ala Ila	r Cys 35 e Pro s Asn h Ala h Ile 1600 h Arg 15 s Arg s Glu h Leu h Arg 1680 r Ile 95 h Asn

Gly Asn Ile	Arg Pro	Ser Gly 1750	Arg Arg		Asp Leu 1755	Thr	Ser 1	Phe	Gly 1760
Asn Gly Pro	Leu Ser	Pro Gly	Gly Pro	Ser	Lys Pro	Gly	Gly (Gly	Gly
-	1769		-	1770		_		1775	
Gly Gly Pro	Gly Ser 1780	Gly Ser	Thr Ser		Gly Glu		Ser 1 1790	Leu	Ala
Glu Val Gln 1799	_	Leu Asp	Lys Glu 1800	Gly A	Ala Ser	Asn :		Val	Ile
Asp Leu Ile 1810		1819	5		1820)			
Leu Leu Ala 1825	Ile Ala	Leu Leu 1830	Glu Gly	_	Asn Thr 1835	Thr	Ile (3ln	His 1840
Ser Phe Phe	Cys Arg		Glu Asp	Lys 1	Lys Ser	Glu :		Phe 1855	
Lys Val Phe	Tyr Asp 1860	Arg Met	Lys Val		Gln Gln		Ile 1 1870	ГЛS	Ala
Thr Val Thr		Thr Ser	Asp Leu 1880	Gly A	Asn Lys	Lys 1885	-	Asp	Asp
Glu Val Asp 1890	Arg Asp	Ala Pro 1899		Lys :	Lys Ala 1900		Glu 1	Pro	Thr
Thr Gln Ile	Thr Glu	Glu Val	Arg Asp	Gln :	Leu Leu	Glu .	Ala s	Ser	Ala
1905		1910			1915				1920
Ala Thr Arg	192	5		1930	_			1935	
Asp His Tyr	1940		194	5			1950		
Lys Asp Asp 1955	5		1960			1965			
Leu Arg Phe 1970	Leu Gln	Leu Leu 1979		Asn 1	His Asn 1980		Asp 1	Leu	Gln
Asn Phe Leu 1985	Arg Cys	Gln Asn 1990	Asn Lys		Asn Tyr 1995	Asn	Leu ¹	Val	Cys 2000
Glu Thr Leu	Gln Phe 200		Cys Ile	Cys (Thr		Gly 2015	
Leu Gly Leu	2020		202	5			2030		
Asn Gln Thr 2035	5		2040	_	-	2045			
Glu Asn Gln 2050	Asn Cys	Ile Ala 205		Glu	Ser Asn 2060		Ile A	Asp	Ile
Ile Thr Ala 2065	Leu Ile	Leu Asn 2070	Asp Ile		Pro Leu 2075	Gly	Lys :	Lys	Arg 2080
Met Asp Leu	Val Leu 208!		Lys Asn	Asn . 2090	Ala Ser	Lys		Leu 2095	
Ala Ile Met	Glu Ser 2100	Arg His	Asp Ser 210		Asn Ala		Arg : 2110	Ile	Leu
Tyr Asn Met 2119	_	Lys Glu	Leu Val 2120	Glu	Val Ile	Lys 2125		Ala	Tyr
Met Gln Gly 2130	Glu Val	Glu Phe 213	_	Gly	Glu Asn 2140		Glu Z	Asp	Gly
Ala Ala Ser	Pro Arg	Asn Val	Gly His	Asn	Ile Tyr	Ile	Leu	Ala	His
2145		2150			2155				2160
Ģln Leu Ala	Arg His		Glu Leu	Gln '		Leu		Pro 2175	
Gly Gln Val	Asp Gly 2180	Asp Glu	Ala Leu 218		Phe Tyr		Lys 1 2190	His	Thr
Ala Gln Ile 219		Val Arg	Leu Asp 2200	Arg	Thr Met	Glu 2205		Ile	Val
Phe Pro Val	Pro Ser	Ile Cys	Glu Phe	Leu	_		Ser :	Lys	Leu
2210		221	5		2220)			

Acces The Masse Masse (mbs mbs als	7 7 G	u. ala alu	Cox III	Tlo Nam
Arg Ile Tyr Tyr 7	2230	arg asp G	2235	ser hys	2240
Asp Phe Phe Leu A	Arg Ser Glu 2245	_	ne Asn Glu 250	Met Asn	Trp Gln 2255
Lys Lys Leu Arg 2 2260		Val Leu Ty 2265	yr Trp Cys	Ala Arg 2270	
Ser Phe Trp Ser S	Ser Ile Ser	Phe Asn Le	eu Ala Val	Leu Met 2285	Asn Leu
Leu Val Ala Phe 1 2290	Phe Tyr Pro 2295	_	ly Val Arg 2300		Thr Leu
Glu Pro His Trp S 2305	2310	_	2315		2320
	2325	23	330		2335
Ala Ser Thr Ile 1 2340		2345		2350)
Leu Phe Leu Leu (2355		2360		2365	
Met Ser Phe Val (2375	5	2380)	
Met Val Leu Asp 1 2385	2390	_	2395		2400
	2405	24	110		2415
Phe Asp Leu Val 1 2420		2425		2430) _
Val Thr Arg Asn (2435		2440		2445	
Ile Leu Val Tyr 1 2450	2455	5	2460)	
Asp Phe Ile Leu (2465	2470		2475		2480
	2485	24	190		2495
Arg Val Glu Thr (2500	_	2505		2510)
Leu Leu Pro Val (2515		2520		2525	
Thr Leu Leu Met (2530	2535	5	254)	
Gly Gly Gly Val (2545	2550		2555		2560
Leu Phe Ala Ala	Arg Val Ile 2565		eu Leu Phe 570	Phe Phe	Met Val 2575
Ile Ile Ile Val 1 2580		Ile Phe G	ly Val Ile	Ile Asp 259	
Ala Asp Leu Arg 2595	Ser Glu Lys	Gln Lys Ly 2600	ys Glu Glu	Ile Leu 2605	Lys Thr
Thr Cys Phe Ile 0 2610	Cys Gly Leu 261		sp Lys Phe 262		Lys Thr
Val Thr Phe Glu (2625	Glu His Ile 2630	Lys Glu G	lu His Asn 2635	Met Trp	His Tyr 2640
Leu Cys Phe Ile	Val Leu Val 2645	_	ys Asp Ser 650	Thr Glu	Tyr Thr 2655
Gly Pro Glu Ser '	Tyr Val Ala			Arg Asn 267	
Trp Phe Pro Arg			eu Val Ser		Ser Glu
2675		2680		2685	

 Met Lys Leu Val Thr Asn Leu Ser Gly Gln Leu Ser Glu Leu Lys Asp

 2705
 2710
 2715
 2720

 Gln Met Thr Glu Gln Arg Lys Gln Lys Gln Arg Ile Gly Leu Leu Gly
 2725
 2730
 2735

 His Pro Pro His Met Asn Val Asn Pro Gln Gln Pro Ala
 2745

<210> 13 <211> 2710 <212> PRT <213> Artificial Sequence

<220>

Met Ser Asp Lys Met Ser Ser Phe Leu His Ile Gly Asp Ile Cys Ser 10 Leu Tyr Ala Glu Gly Ser Thr Asn Gly Phe Ile Ser Thr Leu Gly Leu 25 Val Asp Asp Arg Cys Val Val Gln Pro Glu Ala Gly Asp Leu Asn Asn 40 Pro Pro Lys Lys Phe Arg Asp Cys Leu Phe Lys Leu Cys Pro Met Asn Arg Tyr Ser Ala Gln Lys Gln Phe Trp Lys Ala Ala Lys Pro Gly Ala Asn Ser Thr Thr Asp Ala Val Leu Leu Asn Lys Leu His His Ala Ala 90 85 Asp Leu Glu Lys Lys Gln Asn Glu Thr Glu Asn Arg Lys Leu Leu Gly 105 Thr Val Ile Gln Tyr Gly Asn Val Ile Gln Leu Leu His Leu Lys Ser 120 125 Asn Lys Tyr Leu Thr Val Asn Lys Arg Leu Pro Ala Leu Leu Glu Lys 135 140 Asn Ala Met Arg Val Thr Leu Asp Glu Ala Gly Asn Glu Gly Ser Trp 150 155 Phe Tyr Ile Gln Pro Phe Tyr Lys Leu Arg Ser Ile Gly Asp Ser Val 165 170 Val Ile Gly Asp Lys Val Val Leu Asn Pro Val Asn Ala Gly Gln Pro 185 Leu His Ala Ser Ser His Gln Leu Val Asp Asn Pro Gly Cys Asn Glu 200 205 Val Asn Ser Val Asn Cys Asn Thr Ser Trp Lys Ile Val Leu Phe Met 215 220 Lys Trp Ser Asp Asn Lys Asp Asp Ile Leu Lys Gly Gly Asp Val Val 235 Arg Leu Phe His Ala Glu Gln Glu Lys Phe Leu Thr Cys Asp Glu His 245 250 Arg Lys Lys Gln His Val Phe Leu Arg Thr Thr Gly Arg Gln Ser Ala 265 Thr Ser Ala Thr Ser Ser Lys Ala Leu Trp Glu Val Glu Val Val Gln 280 275 His Asp Pro Cys Arg Gly Gly Ala Gly Tyr Trp Asn Ser Leu Phe Arg 295 300 Phe Lys His Leu Ala Thr Gly His Tyr Leu Ala Ala Glu Val Asp Pro 310 315 Asp Phe Glu Glu Glu Cys Leu Glu Phe Gln Pro Ser Val Asp Pro Asp 325 330

Gln Asp Ala Ser Arg Ser Arg Leu Arg Asn Ala 340 Tyr Ser Leu Val Ser Val Pro Glu Gly Asn Asp 355 360 Glu Leu Asp Pro The The Leu Arg Cly Cly Asp			Lys 350	Met	Val
355 360	Ile	_			
		Ser 365	Ser	Ile	Phe
Glu Leu Asp Pro Thr Thr Leu Arg Gly Gly Asp 370 375	Ser 380		Val	Pro	Arg
Asn Ser Tyr Val Arg Leu Arg His Leu Cys Thr		Thr	Trp	Val	His 400
Ser Thr Asn Ile Pro Ile Asp Lys Glu Glu Glu	Lys	Pro	Val		
405 410 Lys Ile Gly Thr Ser Pro Leu Lys Glu Asp Lys	Glu	Ala		415 Ala	Ile
420 425 Val Pro Val Ser Pro Ala Glu Val Arg Asp Leu	Asp		430 Ala	Asn	Asp
435 440 Ala Ser Lys Val Leu Gly Ser Ile Ala Gly Lys		445 Glu	Lys	Gly	Thr
450 455 Ile Thr Gln Asn Glu Arg Arg Ser Val Thr Lys	460 Leu	Leu	Glu	Asp	Leu
465 470 475					480
Val Tyr Phe Val Thr Gly Gly Thr Asn Ser Gly 485 490	GIN	Asp	vaı	ьеи 495	GIU
Val Val Phe Ser Lys Pro Asn Arg Glu Arg Gln 500	Lys	Leu	Met 510	Arg	Glu
Gln Asn Ile Leu Lys Gln Ile Phe Lys Leu Leu 515 520	Gln	Ala 525	Pro	Phe	Thr
Asp Cys Gly Asp Gly Pro Met Leu Arg Leu Glu 530 535	Glu 540	Leu	Gly	Asp	Gln
Arg His Ala Pro Phe Arg His Ile Cys Arg Leu 545 550 555	Cys	Tyr	Arg	Val	Leu 560
Arg His Ser Gln Gln Asp Tyr Arg Lys Asn Gln 565 570	Glu	Tyr	Ile	Ala 575	Lys
Gln Phe Gly Phe Met Gln Lys Gln Ile Gly Tyr 580 585	Asp	Val	Leu 590	Ala	Glu
Asp Thr Ile Thr Ala Leu Leu His Asn Asn Arg 595 600	Lys	Leu 605	Leu	Glu	Lys
His Ile Thr Ala Ala Glu Ile Asp Thr Phe Val 610 615	Ser 620	Leu	Val	Arg	Lys
Asn Arg Glu Pro Arg Phe Leu Asp Tyr Leu Ser 625 630 635	Asp	Leu	Cys	Val	Ser 640
625 630 635 Met Asn Lys Ser Ile Pro Val Thr Gln Glu Leu 645 650	Ile	Cys	Lys	Ala 655	
Leu Asn Pro Thr Asn Ala Asp Ile Leu Ile Glu 660 665		Lys		Val	Leu
Ser Arg Phe Glu Phe Glu Gly Val Ser Thr Gly			Ala		Glu
675 680 Ala Gly Glu Asp Glu Glu Glu Val Trp Leu Phe	Trp			Ser	Asn
690 695 Lys Glu Ile Arg Ser Lys Ser Val Arg Glu Leu		Gln	Asp	Ala	Lys
705 710 715 Glu Gly Gln Lys Glu Asp Arg Asp Val Leu Ser	Tyr	Tvr	Ara	Tvr	720 Gln
725 730				735	
Leu Asn Leu Phe Ala Arg Met Cys Leu Asp Arg 740 745			750		
Asn Glu Ile Ser Gly Gln Leu Asp Val Asp Leu 755 760		765			
Ser Asp Glu Asn Leu Pro Tyr Asp Leu Arg Ala 770 775	780				
Met Leu His Met His Val Asp Arg Asp Pro Gln 785 790 795	Glu	Gln	Val	Thr	Pro 800
Val Lys Tyr Ala Arg Leu Trp Ser Glu Ile Pro 805 810	Ser	Glu	Ile	Ala 815	Ile

Asp Asp Tyr Asp Ser Ser Gly Ala Ser Lys Asp 820 825	830
	= = =
Phe Ala Gln Thr Met Glu Phe Val Glu Glu Tyr 835 840	Leu Arg Asp Val Val 845
Cys Gln Arg Phe Pro Phe Ser Asp Lys Glu Lys 850 855	Asn Lys Leu Thr Phe 860
Glu Val Val Asn Leu Ala Arg Asn Leu Ile Tyr	Phe Gly Phe Tyr Asn
865 870 875 Phe Ser Asp Leu Leu Arg Leu Thr Lys Ile Leu	880 Leu Ala Ile Leu Asp
885 890	895
Cys Val His Val Thr Thr Ile Phe Pro Ile Ser 900 905	Lys Met Thr Lys Gly 910
Glu Glu Asn Lys Gly Ser Asn Val Met Arg Ser 915 920	Ile His Gly Val Gly 925
Glu Leu Met Thr Gln Val Val Leu Arg Gly Gly	Gly Phe Leu Pro Met
Thr Pro Met Ala Ala Pro Glu Gly Asn Val	
945 950 955	960
Glu Lys Glu Asp Ile Met Val Met Asp Thr Lys 965 970	Leu Lys Ile Ile Glu 975
Ile Leu Gln Phe Ile Leu Asn Val Arg Leu Asp 980 985	Tyr Arg Ile Ser Cys 990
Leu Leu Cys Ile Phe Lys Arg Glu Phe Asp Glu	
995 1000	1005
Ser Glu Thr Ser Ser Gly Asn Ser Ser Gln Glu	Gly Pro Ser Asn Val
	1020
Pro Gly Ala Leu Asp Phe Glu His Ile Glu Glu	
1025 1030 1035	
Phe Gly Gly Ser Glu Glu Asn Thr Pro Leu Asp 1045 1050	1055
Gly Arg Thr Phe Leu Arg Val Leu Leu His Leu 1060 1065	1070
Pro Pro Leu Val Ser Gly Ala Leu Gln Leu Leu 1075 1080	Phe Arg His Phe Ser 1085
Gln Arg Gln Glu Val Leu Gln Ala Phe Lys Gln 1090 1095	Val Gln Leu Leu Val 1100
Thr Ser Gln Asp Val Asp Asn Tyr Lys Gln Ile	
1105 1110 1115	
Gln Leu Arg Ser Ile Val Glu Lys Ser Glu Leu 1125 1130	Trp Val Tyr Lys Gly 1135
Gln Gly Pro Asp Glu Pro Met Asp Gly Ala Ser	
1140 1145	_
Lys Lys Thr Glu Glu Gly Thr Ser Lys Pro Leu 1155 1160	Lys His Glu Ser Thr 1165
Ser Ser Tyr Asn Tyr Arg Val Val Lys Glu Ile 1170 1175	Leu Ile Arg Leu Ser 1180
Lys Leu Cys Val Gln Glu Ser Ala Ser Val Arg	
1185 1190 1195	
Gln Gln Arg Leu Leu Arg Asn Met Gly Ala His 1205 1210	Ala Val Val Leu Glu 1215
Leu Leu Gln Ile Pro Tyr Glu Lys Ala Glu Asp 1220 1225	Thr Lys Met Gln Glu 1230
Ile Met Arg Leu Ala His Glu Phe Leu Gln Asn 1235 1240	
Gln Gln Asn Gln Ala Leu Leu His Lys His Ile 1250 1255	
Pro Gly Ile Leu Glu Ala Val Thr Met Gln His	Ile Phe Met Asn Asn
1265 1270 1275 Phe Cla Lou Cyg Ser Clu Tle Agn Clu Arg Vol	
Phe Gln Leu Cys Ser Glu Ile Asn Glu Arg Val 1285 1290	1295

His Cys Ile Glu 1300		Arg Asn Val	l Gln Tyr Ile	Lys Phe Leu 1310
Gln Thr Ile Val 1315	Lys Ala Glu	Gly Lys Pho	e Ile Lys Lys 132	_
Met Val Met Ala 1330	Glu Leu Val		y Glu Asp Val 1340	Leu Val Phe
Tyr Asn Asp Arg				Met Arg Ser 1360
Glu Arg Asp Arg		Asn Ser Pro	Leu Phe Met	
His Leu Val Glu 1380	Leu Leu Ala			Asn Val Tyr 1390
Thr Glu Ile Lys 1395		Leu Leu Pro	Leu Asp Asp 140	
Val Val Thr His 1410	Glu Asp Cys	Ile Pro Gl	ı Val Lys Ile 1420	Ala Tyr Ile
Asn Phe Leu Asn		Val Asp Th		Met Lys Glu
1425	1430		1435	1440
Ile Tyr Thr Ser	1445	14:	50	1455
Asp Ile Cys Arg	0	1465		1470
Ser Val Leu Glu 1475	Lys Tyr Val	Thr Glu Ile	e Val Met Ser 148	
Thr Phe Phe Ser	Ser Pro Phe			
1490	149		1500	
Arg Gln Pro Val 1505	Phe Val Gln 1510	Leu Leu Gl	n Gly Val Phe 1515	Arg Val Tyr 1520
His Cys Asn Trp	Leu Met Pro 1525	Ser Gln Ly:		Glu Ser Cys 1535
Ile Arg Val Leu 1540	-	Ala Lys Set 1545	r Arg Ala Ile	Ala Ile Pro 1550
Val Asp Leu Asp 1555	Ser Gln Val	Asn Asn Le	ı Phe Leu Lys 156	
Ile Val Gln Lys 1570	157	5	1580	
Ala Arg Arg Asp 1585	1590		1595	1600
Ile Glu Arg Leu	Gln Asp Ile 1605	Val Ser Ala 16		Arg Leu Arg 1615
Pro Leu Val Gln 1620		Ser Val Le	u Val Asp Val	Leu His Arg 1630
Pro Glu Leu Leu 1635	Phe Pro Glu	Asn Thr As	o Ala Arg Arg 164	
Ser Gly Gly Phe 1650	Ile Cys Lys 165	_	s His Thr Lys 1660	Gln Leu Leu
Glu Glu Asn Glu		Cys Ile Ly		
1665 Glu Met Met Thr	1670 Lys Asp Arg	Gly Tyr Gl	1675 y Glu Lys Gly	1680 Glu Ala Leu
7 Cl. Tl. T	1685	16		1695
Arg Gln Ile Leu 1700	0	1705		1710
Arg Arg Glu Glu 1715		1720	172	5
Gly Pro Ser Lys 1730	173	5	1740	
Thr Ser Arg Gly 1745	Glu Met Ser 1750	Leu Ala Gl	u Val Gln Cys 1755	His Leu Asp 1760
Lys Glu Gly Ala	Ser Asn Leu 1765	Val Ile As		Asn Ala Ser 1775

Ser Asp Arg	1780			1785	;				1790)	
Glu Gly Gly 1795		Thr Il	e Gln 1800		Ser	Phe	Phe	Cys 1805		Leu	Thr
Glu Asp Lys 1810	Lys Ser	Glu Ly 18		Phe	Lys	Val	Phe 1820		Asp	Arg	Met
Lys Val Ala 1825	Gln Gln	Glu Il 1830	e Lys	Ala	Thr	Val 1835		Val	Asn	Thr	Ser 1840
Asp Leu Gly	Asn Lys		s Asp	Asp	Glu 1850		Asp	Arg	Asp	Ala 1855	
Ser Arg Lys	Lys Ala 1860	Lys Gl	u Pro	Thr 1865		Gln	Ile	Thr	Glu 1870		Val
Arg Asp Gln 1875		Glu Al	a Ser 1880		Ala	Thr	Arg	Lys 1885		Phe	Thr
Thr Phe Arg 1890	Arg Glu	Ala As 18	-	Asp	Asp	His	Tyr 1900		Ser	Gly	Glu
Gly Thr Gln 1905	Ala Thr	Thr As	p Lys	Ala	Lys	Asp 1915		Leu	Glu	Met	Ser 1920
Ala Val Ile	Thr Ile 192		n Pro	Ile	Leu 1930		Phe	Leu	Gln	Leu 1935	
Cys Glu Asn	1940			1945	;			_	1950)	
Asn Lys Thr 1959	5		1960	0				1965	5		
Cys Ile Cys 1970	Gly Ser	Thr Th		Gly	Leu	Gly	Leu 1980		Gly	Leu	Tyr
Ile Asn Glu	Lys Asn		a Leu	Ile	Asn			Leu	Glu	Ser	
1985		1990	_		~7	1995		_	~	-7.	2000
Thr Glu Tyr	200	5	o Cys		2010		Gin	Asn	Cys	11e 2015	
							_		_		
Thr His Glu	2020			Ile 2025	Ile	Thr			2030	Leu)	Asn
Asp Ile Asn 2035	2020 Pro Leu 5	Gly Ly	s Lys 204	Ile 2025 Arg 0	Ile Met	Thr Asp	Leu	Val 2045	2030 Leu	Leu) Glu	Asn Leu
Asp Ile Asn 2035 Lys Asn Asn 2050	2020 Pro Leu S Ala Ser	Gly Ly Lys Le 20	s Lys 2040 u Leu 55	Ile 2025 Arg O Leu	Ile Met Ala	Thr Asp Ile	Leu Met 2060	Val 2045 Glu)	2030 Leu Ser	Leu) Glu Arg	Asn Leu His
Asp Ile Asn 2035 Lys Asn Asn 2050 Asp Ser Glu 2065	2020 Pro Leu S Ala Ser Asn Ala	Gly Ly Lys Le 20 Glu Ar 2070	s Lys 2040 u Leu 55 g Ile	Ile 2025 Arg 0 Leu Leu	Ile Met Ala Tyr	Thr Asp Ile Asn 2075	Leu Met 2060 Met	Val 2045 Glu) Arg	2030 Leu Ser Pro	Leu Glu Arg Lys	Asn Leu His Glu 2080
Asp Ile Asn 2039 Lys Asn Asn 2050 Asp Ser Glu 2065 Leu Val Glu	2020 Pro Leu Ala Ser Asn Ala Val Ile 208	Gly Ly Lys Le 20 Glu Ar 2070 Lys Ly 5	s Lys 2040 u Leu 55 g Ile s Ala	Ile 2025 Arg 0 Leu Leu	Ile Met Ala Tyr Met 2090	Thr Asp Ile Asn 2075 Gln	Leu Met 2060 Met Gly	Val 2045 Glu) Arg Glu	2030 Leu Ser Pro Val	Leu Glu Arg Lys Glu 2095	Asn Leu His Glu 2080 Phe
Asp Ile Asn 2039 Lys Asn Asn 2050 Asp Ser Glu 2065 Leu Val Glu Glu Asp Gly	2020 Pro Leu Ala Ser Asn Ala Val Ile 208 Glu Asn 2100	Gly Ly Lys Le 20 Glu Ar 2070 Lys Ly 5 Gly Gl	s Lys 2040 u Leu 55 g Ile s Ala u Asp	Ile 2025 Arg Leu Leu Tyr Gly 2105	Met Ala Tyr Met 2090 Ala	Thr Asp Ile Asn 2075 Gln Ala	Leu Met 2060 Met Gly Ser	Val 2045 Glu) Arg Glu Pro	2030 Leu Ser Pro Val Arg 2110	Leu Glu Arg Lys Glu 2095 Asn	Asn Leu His Glu 2080 Phe Val
Asp Ile Asn 2039 Lys Asn Asn 2050 Asp Ser Glu 2065 Leu Val Glu Glu Asp Gly Gly His Asn 2119	2020 Pro Leu Ala Ser Asn Ala Val Ile 208 Glu Asn 2100 Ile Tyr	Gly Ly Lys Le 20 Glu Ar 2070 Lys Ly Gly Gl	s Lys 2040 Leu 55 g Ile s Ala u Asp u Ala 212	Ile 2025 Arg Leu Leu Tyr Gly 2105 His	Met Ala Tyr Met 2090 Ala Gln	Asp Ile Asn 2075 Gln Ala Leu	Leu Met 2060 Met Gly Ser	Val 2045 Glu Arg Glu Pro Arg 2125	2030 Leu Ser Pro Val Arg 2110 His	Leu Clu Arg Lys Glu 2099 Asn Asn	Asn Leu His Glu 2080 Phe Val
Asp Ile Asn 2039 Lys Asn Asn 2050 Asp Ser Glu 2065 Leu Val Glu Glu Asp Gly Gly His Asn 2119 Glu Leu Gln 2130	2020 Pro Leu Ala Ser Asn Ala Val Ile 208 Glu Asn 2100 Ile Tyr Thr Met	Gly Ly Lys Le 20 Glu Ar 2070 Lys Ly Gly Gl Ile Le Leu Ly 21	s Lys 2040 Leu 55 g Ile s Ala u Asp u Ala 2120 s Pro	Ile 2025 Arg Leu Leu Tyr Gly 2105 His Gly	Ile Met Ala Tyr Met 2090 Ala Gln Gly	Asp Ile Asn 2075 Gln Ala Leu Gln	Leu Met 2060 Met Gly Ser Ala Val 2140	Val 2045 Glu Arg Glu Pro Arg 2125 Asp	2030 Leu Ser Pro Val Arg 2110 His	Leu Glu Arg Lys Glu 2095 Asn Asn Asp	Asn Leu His Glu 2080 Phe Val Lys Glu
Asp Ile Asn 2039 Lys Asn Asn 2050 Asp Ser Glu 2065 Leu Val Glu Glu Asp Gly Gly His Asn 2119 Glu Leu Gln 2130 Ala Leu Glu 2145	2020 Pro Leu Ala Ser Asn Ala Val Ile 208 Glu Asn 2100 Ile Tyr Thr Met	Gly Ly Lys Le 20 Glu Ar 2070 Lys Ly Gly Gl Ile Le Leu Ly 21 Ala Ly 2150	s Lys 2040 Leu 55 g Ile s Ala u Asp u Ala 2120 s Pro 35 s His	Ile 2025 Arg Leu Leu Tyr Gly 2105 His Gly Thr	Ile Met Ala Tyr Met 2090 Ala Gln Gly Ala	Asp Ile Asn 2075 Gln Ala Leu Gln Gln 2155	Leu Met 2060 Met Gly Ser Ala Val 2140 Ile	Val 2045 Glu Arg Glu Pro Arg 2125 Asp	2030 Leu Ser Pro Val Arg 2110 His Gly	Leu Clu Arg Lys Glu 2099 Asn Asn Asp	Asn Leu His Glu 2080 Phe Val Lys Glu Arg 2160
Asp Ile Asn 2039 Lys Asn Asn 2050 Asp Ser Glu 2065 Leu Val Glu Glu Asp Gly Gly His Asn 2119 Glu Leu Gln 2130 Ala Leu Glu 2145 Leu Asp Arg	2020 Pro Leu Ala Ser Asn Ala Val Ile 208 Glu Asn 2100 Ile Tyr Thr Met 216	Gly Ly Lys Le 20 Glu Ar 2070 Lys Ly Gly Gl Ile Le Leu Ly 21 Ala Ly 2150 Glu Gl	s Lys 2040 Leu 55 g Ile s Ala u Asp u Ala 2120 s Pro 35 s His	Leu Leu Tyr Gly 2105 His O Gly Thr	Met Ala Tyr Met 2090 Ala Gln Gly Ala Phe 2170	Asp Ile Asn 2075 Gln Ala Leu Gln 2155 Pro	Met 2060 Met Gly Ser Ala Val 2140 Ile Val	Val 2045 Glu Arg Glu Pro Arg 2125 Asp) Glu	2030 Leu Ser Pro Val Arg 2110 His Gly Ile	Leu Glu Arg Lys Glu 2095 Asn Asp Val Ile 2175	Asn Leu His Glu 2080 Phe Val Lys Glu Arg 2160 Cys
Asp Ile Asn 2039 Lys Asn Asn 2050 Asp Ser Glu 2065 Leu Val Glu Glu Asp Gly Gly His Asn 2119 Glu Leu Gln 2130 Ala Leu Glu 2145 Leu Asp Arg	2020 Pro Leu Ala Ser Asn Ala Val Ile 208 Glu Asn 2100 Ile Tyr Thr Met 216 Thr Lys 2180	Gly Ly Lys Le 20 Glu Ar 2070 Lys Ly Gly Gl Ile Le Leu Ly 21 Ala Ly 2150 Glu Gl 5 Glu Se	s Lys 2040 Leu 55 g Ile s Ala u Asp u Ala 2120 s Pro 35 s His n Ile r Lys	Leu Leu Tyr Gly 2105 His O Gly Thr Val Leu 2185	Met Ala Tyr Met 2090 Ala Gln Gly Ala Phe 2170 Arg	Asp Ile Asn 2075 Gln Ala Leu Gln 2155 Pro Ile	Met 2060 Met Gly Ser Ala Val 2140 Ile Val Tyr	Val 2045 Glu Arg Glu Pro Arg 2125 Asp Glu Pro	2030 Leu Ser Pro Val Arg 2110 His Gly Ile Ser Thr 2190	Leu Glu Arg Lys Glu 2095 Asn Asp Val Ile 2175 Thr	Asn Leu His Glu 2080 Phe Val Lys Glu Arg 2160 Cys Glu
Asp Ile Asn 2039 Lys Asn Asn 2050 Asp Ser Glu 2065 Leu Val Glu Glu Asp Gly Gly His Asn 2119 Glu Leu Gln 2130 Ala Leu Glu 2145 Leu Asp Arg Glu Phe Leu Arg Asp Glu 2199	2020 Pro Leu Ala Ser Asn Ala Val Ile 208 Glu Asn 2100 Ile Tyr Thr Met 216 Thr Lys 2180 Gln Gly	Gly Ly Lys Le 20 Glu Ar 2070 Lys Ly Gly Gl Ile Le Leu Ly 21 Ala Ly 2150 Glu Gl Glu Se Ser Ly	s Lys 2040 Leu 55 g Ile s Ala u Asp u Ala 2120 s Pro 35 s His n Ile r Lys s Ile 220	Leu Tyr Gly 2105 Gly Thr Val Leu 2185 Asn	Ile Met Met Ala Tyr Met 2090 Ala Gln Gly Ala Phe 2170 Arg Asp	Asp Ile Asn 2075 Gln Ala Leu Gln Gln 2155 Pro Ile Phe	Met 2060 Met Gly Ser Ala Val 2140 Val Tyr Phe	Val 2045 Glu Arg Glu Pro Arg 2125 Asp Glu Pro Tyr Leu 2205	2030 Leu Ser Pro Val Arg 2110 His Gly Ile Ser Thr 2190 Arg	Leu Glu Arg Lys Glu 2095 Asn Asn Asp Val Ile 2175 Thr	Leu His Glu 2080 Phe Val Lys Glu Arg 2160 Cys Glu Glu
Asp Ile Asn 2039 Lys Asn Asn 2050 Asp Ser Glu 2065 Leu Val Glu Glu Asp Gly Gly His Asn 2119 Glu Leu Gln 2130 Ala Leu Glu 2145 Leu Asp Arg Glu Phe Leu Arg Asp Glu Asp Leu Phe 2210	2020 Pro Leu Ala Ser Asn Ala Val Ile 208 Glu Asn 2100 Ile Tyr Thr Met 216 Thr Lys 2180 Gln Gly Asn Glu Asn Glu	Gly Ly Lys Le 20 Glu Ar 2070 Lys Ly Gly Gl Ile Le Leu Ly 21 Ala Ly 2150 Glu Gl Glu Se Ser Ly Met As 22	s Lys 2040 Leu 55 g Ile s Ala u Asp u Ala 2120 s Pro 35 s His n Ile r Lys s Ile 2200 n Trp	Ile 2025 Arg Leu Leu Tyr Gly 2105 His Gly Thr Val Leu 2185 Asn O Gln	Met Ala Tyr Met 2090 Ala Gln Gly Ala Phe 2170 Arg Asp Lys	Asp Ile Asn 2075 Gln Ala Leu Gln Gln 2155 Pro Ile Phe Lys	Met 2060 Met Gly Ser Ala Val 2140 Val Tyr Phe Leu 2220	Val 2045 Glu Arg Glu Pro Arg 2125 Asp Glu Pro Tyr Leu 2205 Arg	2030 Leu Ser Pro Val Arg 2110 His Gly Ile Ser Thr 2190 Arg Arg	Leu Glu Arg Lys Glu 2095 Asn Asp Val Ile 2175 Thr Ser Gln	Asn Leu His Glu 2080 Phe Val Lys Glu Arg 2160 Cys Glu Glu Pro
Asp Ile Asn 2039 Lys Asn Asn 2050 Asp Ser Glu 2065 Leu Val Glu Glu Asp Gly Gly His Asn 2119 Glu Leu Gln 2130 Ala Leu Glu 2145 Leu Asp Arg Glu Phe Leu Arg Asp Glu Asp Leu Phe	2020 Pro Leu Ala Ser Asn Ala Val Ile 208 Glu Asn 2100 Ile Tyr Thr Met 216 Thr Lys 2180 Gln Gly Asn Glu Trp Cys	Gly Ly Lys Le 20 Glu Ar 2070 Lys Ly 5 Gly Gl Ile Le Leu Ly 2150 Glu Gl 5 Glu Se Ser Ly Met As 22 Ala Ar 2230	s Lys 2040 Leu 55 g Ile s Ala u Asp u Ala 2120 S His n Ile r Lys s Ile 2200 n Trp 15 g Asn	Ile 2025 Arg Leu Leu Tyr Gly 2105 His Gly Thr Val Leu 2185 Asn O Gln Met	Ile Met Met Ala Tyr Met 2090 Ala Gln Gly Ala Phe 2170 Arg Arg Lys Ser	Asp Ile Asn 2075 Gln Ala Leu Gln Gln 2155 Pro Ile Phe Lys Phe 2235	Met 2060 Met Gly Ser Ala Val 2140 Val Tyr Phe Leu 2220 Trp	Val 2045 Glu Arg Glu Pro Arg 2125 Asp Glu Pro Tyr Leu 2205 Arg Ser	2030 Leu Ser Pro Val Arg 2110 His Gly Ile Ser Thr 2190 Arg Arg Arg Arg Ser	Leu Glu Arg Lys Glu 2095 Asn Asp Val Ile 2175 Thr Ser Gln Ile	Asn Leu His Glu 2080 Phe Val Lys Glu Arg 2160 Cys Glu Glu Pro Ser 2240

1110	Lys	Gly	Val 2260	_	Gly	Gly	Thr	Leu 2265		Pro	His	Trp	Ser 2270	Gly	Leu
Leu	Trp	Thr 2275		Met	Leu	Ile	Ser 2280		Ala	Ile	Val	Ile 2285		Leu	Pro
Lys	Pro 2290	His		Ile	Arg	Ala 2299	Leu		Ala	Ser	Thr 2300		Leu	Arg	Leu
Ile 2305		Ser	Val	Gly	Leu 2310		Pro	Thr	Leu	Phe 2315		Leu	Gly	Ala	Phe 2320
		Cys	Asn	Lys 2325		Ile	Phe	Leu	Met 2330		Phe	Val	Gly	Asn 2335	
Gly	Thr	Phe	Thr 2340		Gly	Tyr	Arg	Ala 2345		Val	Leu	Asp	Val 2350	Glu)	Phe
Leu	Tyr	His 2355		Leu	Tyr	Leu	Leu 2360		Cys	Ala	Met	Gly 2365		Phe	Val
His	Glu 2370		Phe	Tyr	Ser	Leu 2375		Leu	Phe	Asp	Leu 2380		Tyr	Arg	Glu
2385	5				2390)				2399	5			Arg	2400
				2405	5				2410)		_		Phe 2415	5
			2420)				2425	5				2430		
_		2435	5				2440)			_	2445	5	Leu	
	2450)				2455	5	_	_		2460)		Glu	
2465	5				2470)				2475	5			Glu	2480
			_	2489	5		_		2490	כ				Ile 2495	5
Thr	Val	T.e.11	Cox	His	C1	T 011	Ara.	Ser	Clar	Glv	Glv	Val	G1v	Λen	Val
			2500)				2505	5				2510)	
	Arg	Lys 2515	2500 Pro) Ser	Lys	Glu	Glu 2520	2505 Pro)	Leu	Phe	Ala	Ala 2525	2510 Arg) Val	Ile
Tyr	Arg Asp 2530	Lys 2515 Leu)	2500 Pro Leu	Ser Phe	Lys Phe	Glu Phe 2535	Glu 2520 Met	2505 Pro) Val	Leu Ile	Phe Ile	Ala Ile 2540	Ala 2525 Val	2510 Arg Leu	Val Asn	Ile Leu
Tyr Ile 2545	Arg Asp 2530 Phe	Lys 2519 Leu) Gly	2500 Pro Leu Val	Ser Phe Ile	Lys Phe Ile 2550	Glu Phe 2535 Asp	Glu 2520 Met Thr	2505 Pro) Val Phe	Leu Ile Ala	Phe Ile Asp 2555	Ala Ile 2540 Leu	Ala 2525 Val) Arg	2510 Arg Leu Ser	Val Asn Glu	Ile Leu Lys 2560
Tyr Ile 2545 Gln	Arg Asp 2530 Phe Lys	Lys 2519 Leu) Gly Lys	2500 Pro Leu Val Glu	Ser Phe Ile Glu 256	Lys Phe Ile 2550 Ile	Glu Phe 2535 Asp) Leu	Glu 2520 Met Thr	2509 Pro Val Phe	Leu Ile Ala Thr 2570	Phe Ile Asp 2555 Cys	Ala Ile 2540 Leu Phe	Ala 2525 Val) Arg Ile	2510 Arg Leu Ser	Val Asn Glu Gly 2575	Ile Leu Lys 2560 Leu
Tyr Ile 2545 Gln Glu	Arg Asp 2530 Phe Lys Arg	Lys 2519 Leu Gly Lys Asp	2500 Pro Leu Val Glu Lys 2580	Ser Phe Ile Glu 2569 Phe	Lys Phe Ile 2550 Ile Asp	Glu Phe 2535 Asp) Leu Asn	Glu 2520 Met Thr Lys	2505 Pro Val Phe Thr Thr 2585	Leu Ile Ala Thr 2570 Val	Phe Ile Asp 2555 Cys Thr	Ala Ile 2540 Leu Phe	Ala 2525 Val) Arg Ile Glu	2510 Arg Leu Ser Cys Glu 2590	Val Asn Glu Gly 2575 His	Ile Leu Lys 2560 Leu Ile
Tyr Ile 2545 Gln Glu	Arg Asp 2530 Phe Lys Arg	Lys 2519 Leu Gly Lys Asp	2500 Pro Leu Val Glu Lys 2580 His	Ser Phe Ile Glu 2569 Phe	Lys Phe Ile 2550 Ile Asp	Glu Phe 2535 Asp) Leu Asn	Glu 2520 Met Thr Lys	2505 Pro Val Phe Thr Thr 2585 Tyr	Leu Ile Ala Thr 2570 Val	Phe Ile Asp 2555 Cys Thr	Ala Ile 2540 Leu Phe	Ala 2525 Val) Arg Ile Glu	2510 Arg Leu Ser Cys Glu 2590 Val	Val Asn Glu Gly 2575	Ile Leu Lys 2560 Leu Ile
Tyr Ile 2545 Gln Glu Lys	Arg Asp 2530 Phe Lys Arg	Lys 2519 Leu) Gly Lys Asp Glu 2599 Lys	2500 Pro Leu Val Glu Lys 2580 His	Ser Phe Ile Glu 2569 Phe Asn	Lys Phe Ile 2550 Ile Asp Met	Phe 2535 Asp Leu Asn	Glu 2520 Met Thr Lys Lys His 2600	2505 Pro Val Phe Thr 2585 Tyr	Leu Ile Ala Thr 2570 Val Leu	Phe Ile Asp 2555 Cys Thr	Ala Ile 2540 Leu Phe Phe	Ala 2525 Val) Arg Ile Glu Ile 2605 Ser	2510 Arg Leu Ser Cys Glu 2590 Val	Val Asn Glu Gly 2575 His	Ile Leu Lys 2560 Leu Ile Val
Tyr Ile 2545 Gln Glu Lys Lys	Arg Asp 2530 Phe Lys Arg Glu Val 2610 Met	Lys 2519 Leu Gly Lys Asp Glu 2599 Lys	2500 Pro Leu Val Glu Lys 2580 His	Ser Phe Ile Glu 2565 Phe Asn	Lys Phe Ile 2550 Ile Asp Met Thr	Phe 2535 Asp Description of the contract of th	Glu 2520 Met Thr Lys Lys His 2600 Tyr	2505 Pro Val Phe Thr Thr 2585 Tyr	Leu Ile Ala Thr 2570 Val Leu Gly	Phe Ile Asp 2555 Cys Thr Cys Pro	Ala Ile 2540 Leu Phe Phe Phe Phe Phe Pro	Ala 2525 Val) Arg Ile Glu Ile 2605 Ser	2510 Arg Leu Ser Cys Glu 2590 Val	Val Asn Glu Gly 2575 His Leu	Ile Leu Lys 2560 Leu Ile Val
Tyr Ile 2545 Gln Glu Lys Lys Glu 2625	Arg Asp 2530 Phe Lys Arg Glu Val 2610 Met	Lys 2519 Leu Cly Cly Clu 2599 Lys Lys Ile	2500 Pro Leu Val Glu Lys 2580 His Asp	Ser Phe Ile Glu 2565 Phe Asn Ser	Lys Phe Ile 2550 Ile Asp Met Thr Arg 2630 Ser	Phe 2535 Asp Leu Asn Trp Glu 2615 Asn	Glu 2520 Met Thr Lys Lys His 2600 Tyr Leu	2505 Pro Val Phe Thr Thr 2585 Tyr Thr	Leu Ile Ala Thr 2570 Val Leu Gly	Phe Ile Asp 2555 Cys Thr Cys Pro Phe 2635 Glu	Ala Ile 2540 Leu Phe Phe Phe Phe Phe Glu 2620 Pro	Ala 2525 Val) Arg Ile Glu Ile 2605 Ser) Arg	2510 Arg Leu Ser Cys Glu 2590 Val Tyr	Val Asn Glu Gly 2575 His Leu Val	Leu Lys 2560 Leu Ile Val Ala Ala 2640 Arg
Tyr Ile 2545 Gln Glu Lys Lys Glu 2625 Met	Arg Asp 2530 Phe Lys Arg Glu Val 2610 Met	Lys 2519 Leu Clys Asp Glu 2599 Lys Ile Leu	2500 Pro Leu Val Glu Lys 2580 His Asp Arg	Ser Phe Ile Glu 2569 Phe Asn Ser Glu Ser 2649 Lys	Lys Phe Ile 2550 Ile Asp Met Thr Arg 2630 Ser	Phe 2535 Asp Leu Asn Trp Glu 2615 Asn Asp	Glu 2520 Met Thr Lys Lys His 2600 Tyr Leu Ser	2505 Pro Pro Val Phe Thr 2585 Tyr Thr Asp Glu	Leu Ile Ala Thr 2570 Val Leu Gly Trp Gly 2650 Met	Phe Ile Asp 2555 Cys Thr Cys Pro Phe 2635 Glu	Ala Ile 2540 Leu Phe Phe Phe Glu 2620 Pro Gln	Ala 2525 Val) Arg Ile Glu Ile 2605 Ser) Arg	2510 Arg Leu Ser Cys Glu 2590 Val Tyr Met	Val Asn Glu Gly 2575 His Leu Val Arg Leu 2655 Asn	Leu Lys 2560 Leu Ile Val Ala Ala 2640 Arg
Tyr Ile 2545 Gln Glu Lys Lys Glu 2625 Met Asn	Arg Asp 2530 Phe Lys Arg Glu Val 2610 Met Ser Leu	Lys 2519 Leu Gly Lys Asp Glu 2599 Lys Ile Leu Gln	2500 Pro Leu Val Glu Lys 2580 His Asp Arg Val Glu 2660 Leu	Ser Phe Ile Glu 2569 Phe Asn Ser Glu Ser 2649 Lys	Lys Phe Ile 2550 Ile Asp Met Thr Arg 2630 Ser Leu	Phe 2535 Asp Leu Asn Trp Glu 2615 Asn Asp Glu	Glu 2520 Met Thr Lys Lys His 2600 Tyr Leu Ser	2505 Pro Val Phe Thr 2585 Tyr Thr Asp Glu Thr 2665 Asp	Leu Ile Ala Thr 2570 Val Leu Gly Trp Gly 2650 Met	Phe Ile Asp 2555 Cys Thr Cys Pro Phe 2639 Glu Lys	Ala Ile 2540 Leu Phe Phe Phe Glu 2620 Pro Gln Leu	Ala 2525 Val) Arg Ile Glu Ile 2605 Ser) Arg	2510 Arg Leu Ser Cys Glu 2590 Val Tyr Met Glu Thr 2670 Gln	Val Asn Glu Gly 2575 His Leu Val Arg Leu 2655 Asn	Leu Lys 2560 Leu Ile Val Ala Ala 2640 Arg Leu
Tyr Ile 2545 Gln Glu Lys Lys Glu 2625 Met Asn Ser Gln	Arg Asp 2530 Phe Lys Arg Glu Val 2610 Met Ser Leu Gly Lys 2690	Lys 2519 Leu Gly Lys Asp Glu 2599 Lys Ile Leu Gln Gln 2679	2500 Pro Leu Val Glu Lys 2580 His Asp Arg Val Glu 2660 Leu 5	Ser Phe Ile Glu 2569 Phe Asn Ser Glu Ser 2649 Lys Ser Ile	Lys Phe Ile 2550 Ile Asp Met Thr Arg 2630 Ser Leu Glu Gly	Glu Phe 2535 Asp Leu Asn Trp Glu 2615 Asn Asp Glu Leu Leu	Glu 2520 Met Thr Lys Lys 2600 Tyr Leu Ser Lys 2680 Leu	2505 Pro Val Phe Thr 2585 Tyr Thr Asp Glu Thr 2665 Asp	Leu Ile Ala Thr 2570 Val Leu Gly Trp Gly 2650 Met Gln	Phe Ile Asp 2555 Cys Thr Cys Pro Phe 2635 Glu Lys Met	Ala Ile 2540 Leu Phe Phe Phe Glu 2620 Pro Gln Leu Thr	Ala 2525 Val Val Ile Glu Ile 2605 Ser Arg Asn Val Glu 2685 His	2510 Arg Leu Ser Cys Glu 2590 Val Tyr Met Glu Thr 2670 Gln	Val Asn Glu Gly 2575 His Leu Val Arg Leu 2655 Asn	Leu Lys 2560 Leu Ile Val Ala Ala 2640 Arg Leu Lys

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<211> 2749
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<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:/note =
 synthetic construct

<400> 14 Met Ser Asp Lys Met Ser Ser Phe Leu His Ile Gly Asp Ile Cys Ser Leu Tyr Ala Glu Gly Ser Thr Asn Gly Phe Ile Ser Thr Leu Gly Leu Val Asp Asp Arg Cys Val Val Gln Pro Glu Ala Gly Asp Leu Asn Asn 40 Pro Pro Lys Lys Phe Arg Asp Cys Leu Phe Lys Leu Cys Pro Met Asn Arg Tyr Ser Ala Gln Lys Gln Phe Trp Lys Ala Ala Lys Pro Gly Ala Asn Ser Thr Thr Asp Ala Val Leu Leu Asn Lys Leu His His Ala Ala 90 Asp Leu Glu Lys Lys Gln Asn Glu Thr Glu Asn Arg Lys Leu Leu Gly 105 100 Thr Val Ile Gln Tyr Gly Asn Val Ile Gln Leu Leu His Leu Lys Ser 120 Asn Lys Tyr Leu Thr Val Asn Lys Arg Leu Pro Ala Leu Leu Glu Lys 135 Asn Ala Met Arg Val Thr Leu Asp Glu Ala Gly Asn Glu Gly Ser Trp 150 155 Phe Tyr Ile Gln Pro Phe Tyr Lys Leu Arg Ser Ile Gly Asp Ser Val 165 170 Val Ile Gly Asp Lys Val Val Leu Asn Pro Val Asn Ala Gly Gln Pro 185 Leu His Ala Ser Ser His Gln Leu Val Asp Asn Pro Gly Cys Asn Glu 200 Val Asn Ser Val Asn Cys Asn Thr Ser Trp Lys Ile Val Leu Phe Met 215 220 Lys Trp Ser Asp Asn Lys Asp Asp Ile Leu Lys Gly Gly Asp Val Val 230 235 Arg Leu Phe His Ala Glu Gln Glu Lys Phe Leu Thr Cys Asp Glu His 245 250 Arg Lys Lys Gln His Val Phe Leu Arg Thr Thr Gly Arg Gln Ser Ala 265 Thr Ser Ala Thr Ser Ser Lys Ala Leu Trp Glu Val Glu Val Val Gln 280 285 His Asp Pro Cys Arg Gly Gly Ala Gly Tyr Trp Asn Ser Leu Phe Arg 300 295 Phe Lys His Leu Ala Thr Gly His Tyr Leu Ala Ala Glu Val Asp Pro 310 315 Asp Phe Glu Glu Glu Cys Leu Glu Phe Gln Pro Ser Val Asp Pro Asp 325 330 Gln Asp Ala Ser Arg Ser Arg Leu Arg Asn Ala Gln Glu Lys Met Val 345 Tyr Ser Leu Val Ser Val Pro Glu Gly Asn Asp Ile Ser Ser Ile Phe 360 Glu Leu Asp Pro Thr Thr Leu Arg Gly Gly Asp Ser Leu Val Pro Arg 375 Asn Ser Tyr Val Arg Leu Arg His Leu Cys Thr Asn Thr Trp Val His 395 Ser Thr Asn Ile Pro Ile Asp Lys Glu Glu Lys Pro Val Met Leu

Lys	Ile	Gly	Thr 420	Ser	Pro	Leu	Lys	Glu 425	Asp	Lys	Glu	Ala	Phe 430	Ala	Ile
Val	Pro	Val 435	Ser	Pro	Ala	Glu	Val 440	Arg	Asp	Leu	Asp	Phe 445	Ala	Asn	Asp
Ala	Ser 450	Lys	Val	Leu	Gly	Ser 455	Ile	Ala	Gly	Lys	Leu 460	Glu	Lys	Gly	Thr
Ile 465	Thr	Gln	Asn	Glu	Arg 470	Arg	Ser	Val	Thr	Lys 475	Leu	Leu	Glu	Asp	Leu 480
Val	Tyr	Phe	Val	Thr 485	Gly	Gly	Thr	Asn	Ser 490	Gly	Gln	Asp	Val	Leu 495	Glu
Val	Val	Phe	Ser 500	Lys	Pro	Asn	Arg	Glu 505	Arg	Gln	Lys	Leu	Met 510	Arg	Glu
		515		_	Gln		520	_				525			
_	530	_	_		Pro	535					540				
545					Arg 550			-		555					560
				565	Asp				570					575	
		_	580		Gln	_		585	_				590		
_		595			Leu		600					605			
	610				Glu	615	_				620				
Asn 625	Arg	GIU	Pro	Arg	Phe 630	Leu	Asp	Tyr	ьeu	635	Asp	Leu	Cys	vaı	5er 640
Met	Asn	Lys	Ser	Ile 645	Pro	Val	Thr	Gln	Glu 650	Leu	Ile	Cys	Lys	Ala 655	Val
			660		Ala	-		665					670		
		675			Glu		680					685			
	690				Glu	695					700				
Lys 705	Glu	Ile	Arg	Ser	Lys 710	Ser	Val	Arg	Glu	Leu 715	Ala	Gln	Asp	Ala	Lys 720
Glu	Gly	Gln	Lys	Glu 725	Asp	Arg	Asp	Val	Leu 730	Ser	Tyr	Tyr	Arg	Tyr 735	Gln
Leu	Asn	Leu	Phe 740	Ala	Arg	Met	Cys	Leu 745	Asp	Arg	Gln	Tyr	Leu 750	Ala	Ile
		755		_			760					765			Met
	770					775					780				Leu
Met 785	Leu	His	Met	His	Val 790	Asp	Arg	Asp	Pro	Gln 795	Glu	Gln	Val	Thr	Pro 800
	Lys	Tyr	Ala	Arg 805	Leu	Trp	Ser	Glu	Ile 810	Pro	Ser	Glu	Ile	Ala 815	Ile
Asp	Asp	Tyr	Asp 820	Ser	Ser	Gly	Ala	Ser 825	Lys	Asp	Glu	Ile	Lys 830	Glu	Arg
Phe	Ala	Gln 835	Thr	Met	Glu	Phe	Val 840	Glu	Glu	Tyr	Leu	Arg 845	Asp	Val	Val
Cys	Gln 850	Arg	Phe	Pro	Phe	Ser 855	Asp	Lys	Glu	Lys	Asn 860	Lys	Leu	Thr	Phe
Glu 865		Val	Asn	Leu	Ala 870		Asn	Leu	Ile	Tyr 875		Gly	Phe	Tyr	Asn 880
Phe	Ser	Asp	Leu	Leu 885	Arg	Leu	Thr	Lys	Ile 890	Leu	Leu	Ala	Ile	Leu 895	Asp

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Cys	Val	His	Val 900	Thr	Thr	Ile	Phe	Pro 905	Ile	Ser	Lys	Met	Thr 910	Lys	Gly
Glu	Glu	Asn 915		Gly	Ser	Asn	Val 920		Arg	Ser	Ile	His 925	Gly	Val	Gly
~-7	_		1	~3		7		3	~ 7		~7		.	D	36-4
Glu	Leu 930	Met	Thr	Gln	Val	Val 935	Leu	Arg	GIY	GIY	G1y 940	Phe	Leu	Pro	Met
Thr	Pro	Met	Ala	Ala	Ala	Pro	Glu	Gly	Asn	Val	Lys	Gln	Ala	Glu	Pro
945					950			-		955	•				960
	Lare	Glu	Δen	Tle		Wa 1	Met	Δen	Thr		T.e.11	Lys	Tle	Tle	
Giu	цуз	Gru	rab	965	Mec	vai	NCC	лор	970	цуз	пси	Lys		975	Olu
		~ 3	51 .		-		**- 7	3			m		T 1 -		C
ше	Leu	Gin	980	TTE	Leu	Asn	vaı	985	ьeu	Asp	Tyr	Arg	990	ser	Cys
Leu	Leu	Cys	Ile	Phe	Lys	Arg	Glu	Phe	Asp	Glu	Ser	Asn	Ser	Gln	Ser
		995					1000)				1005	5		
Ser	Glu	Thr	Ser	Ser	Gly	Asn	Ser	Ser	Gln	Glu	Gly	Pro	Ser	Asn	Val
	1010				-	1019					1020				
Pro			Leu	Asp	Phe			Ile	Glu	Glu	Gln	Ala	Glu	Glv	Ile
1025	_	1114	200	p	1030					1035				0-1	1040
		C1	602	C1.,			Thr	Dro	T 011			Asp	7 an	uio	
FIIE	GIY	GIY	Ser			ASII	TIII	PIO		_	пец	Asp	Asp		
~7	_	1	-1	1045					1050		m1	37 - 1-	***	1055	
GIY	Arg	Thr			Arg	vaı	ьeu			ьeu	Thr	Met			Tyr
			1060					1065					1070		
Pro	Pro	Leu	Val	Ser	Gly	Ala	Leu	Gln	Leu	Leu	Phe	Arg	His	Phe	Ser
		1075	5				1080)				1085	5		
Gln	Arg	Gln	Glu	Val	Leu	Gln	Ala	Phe	Lys	Gln	Val	Gln	Leu	Leu	Val
	1090					1099					1100				
Thr	Ser	Gln	Asp	Val	Asp	Asn	Tvr	Lvs	Gln	Ile	Lvs	Gln	Asp	Leu	Asp
1105					1110				_	1119	_		-		1120
		Δτα	Ser	Tle			Lve	Ser	Glu			Val	Tyr	Lvs	
0111	шец	n-9	DCI	1125		OIU	Lys	JÇ1	1130		ттр	Val	- 7 -	1135	_
								_							
al	al	D	7	~1	D	R/	70	~77	7 7 -	0			7	al	TT - ~
Gln	Gly	Pro			Pro	Met	Asp			Ser	GIY	Glu			His
			1140)				1145	5				1150)	
		Thr	1140 Glu)			Ser	1145 Lys	5			His	1150 Glu)	
Lys	Lys	Thr 1155	1140 Glu 5	Glu	Gly	Thr	Ser 1160	1145 Lys)	Pro	Leu	Lys	His 1169	1150 Glu 5	Ser	Thr
Lys	Lys	Thr 1155	1140 Glu 5	Glu	Gly	Thr	Ser 1160	1145 Lys)	Pro	Leu	Lys	His	1150 Glu 5	Ser	Thr
Lys	Lys	Thr 1155 Tyr	1140 Glu 5	Glu	Gly	Thr	Ser 1160 Val	1145 Lys)	Pro	Leu	Lys	His 1169 Ile	1150 Glu 5	Ser	Thr
Lys Ser	Lys Ser 1170	Thr 1155 Tyr)	1140 Glu 5 Asn	Glu Tyr	Gly Arg	Thr Val 117	Ser 1160 Val	1149 Lys) Lys	Pro Glu	Leu Ile	Lys Leu 1180	His 1169 Ile	1150 Glu S Arg	Ser Leu	Thr Ser
Lys Ser	Lys Ser 1170 Leu	Thr 1155 Tyr)	1140 Glu 5 Asn	Glu Tyr	Gly Arg	Thr Val 1175 Ser	Ser 1160 Val	1149 Lys) Lys	Pro Glu	Leu Ile	Lys Leu 1180 Lys	His 1169 Ile	1150 Glu S Arg	Ser Leu	Thr Ser
Lys Ser Lys 1185	Lys Ser 1170 Leu	Thr 1155 Tyr) Cys	114(Glu 5 Asn Val	Glu Tyr Gln	Gly Arg Glu 1190	Thr Val 117! Ser	Ser 1160 Val 5 Ala	1149 Lys) Lys Ser	Pro Glu Val	Leu Ile Arg	Lys Leu 1180 Lys	His 1169 Ile O Ser	1150 Glu S Arg Arg	Ser Leu Lys	Thr Ser Gln 1200
Lys Ser Lys 1185	Lys Ser 1170 Leu	Thr 1155 Tyr) Cys	114(Glu 5 Asn Val	Glu Tyr Gln Leu	Gly Arg Glu 1190 Arg	Thr Val 117! Ser	Ser 1160 Val 5 Ala	1149 Lys) Lys Ser	Pro Glu Val Ala	Leu Ile Arg 1199 His	Lys Leu 1180 Lys	His 1169 Ile	1150 Glu S Arg Arg	Ser Leu Lys Leu	Thr Ser Gln 1200 Glu
Lys Ser Lys 1185 Gln	Lys Ser 1170 Leu Gln	Thr 1155 Tyr) Cys Arg	1140 Glu S Asn Val Leu	Glu Tyr Gln Leu 1209	Gly Arg Glu 1190 Arg	Thr Val 117! Ser) Asn	Ser 1160 Val S Ala Met	1149 Lys Lys Ser	Pro Glu Val Ala	Leu Ile Arg 1199 His	Lys Leu 1180 Lys Ala	His 1169 Ile Ser Val	1150 Glu S Arg Arg Val	Ser Leu Lys Leu 1215	Thr Ser Gln 1200 Glu
Lys Ser Lys 1185 Gln	Lys Ser 1170 Leu Gln	Thr 1155 Tyr) Cys Arg	1140 Glu Asn Val Leu	Glu Tyr Gln Leu 1205	Gly Arg Glu 1190 Arg Tyr	Thr Val 1175 Ser) Asn Glu	Ser 1160 Val 5 Ala Met	Lys Lys Lys Ser Gly	Pro Glu Val Ala 1210	Leu Ile Arg 1199 His O Asp	Lys Leu 1180 Lys Ala	His 1169 Ile Ser Val	1150 Glu Arg Arg Val	Ser Leu Lys Leu 1215 Gln	Thr Ser Gln 1200 Glu
Lys Ser Lys 1185 Gln Leu	Lys Ser 1170 Leu Gln Leu	Thr 1155 Tyr Cys Arg	1140 Glu Asn Val Leu Ile 1220	Glu Tyr Gln Leu 1209 Pro	Gly Arg Glu 1190 Arg Tyr	Thr Val 117! Ser) Asn Glu	Ser 1160 Val Ala Met	Lys Lys Ser Gly	Pro Glu Val Ala 1210 Glu	Leu Ile Arg 1199 His N	Lys Leu 1180 Lys Ala	His 1169 Ile Ser Val	1150 Glu Arg Arg Val Met	Leu Lys Leu 1215 Gln	Thr Ser Gln 1200 Glu Glu
Lys Ser Lys 1185 Gln Leu	Lys Ser 1170 Leu Gln Leu	Thr 1155 Tyr) Cys Arg Gln	1140 Glu Asn Val Leu Ile 1220 Leu	Glu Tyr Gln Leu 1209 Pro	Gly Arg Glu 1190 Arg Tyr	Thr Val 117! Ser) Asn Glu	Ser 1160 Val Ala Met Lys	Lys Lys Ser Gly Ala 1225 Leu	Pro Glu Val Ala 1210 Glu	Leu Ile Arg 1199 His N	Lys Leu 1180 Lys Ala	His 1169 Ile Ser Val Lys	1150 Glu Arg Arg Val Met 1230 Ala	Leu Lys Leu 1215 Gln	Thr Ser Gln 1200 Glu Glu
Lys Ser Lys 1185 Gln Leu Ile	Lys Ser 1170 Leu Gln Leu Met	Thr 1155 Tyr Cys Arg Gln Arg 1235	1140 Glu Asn Val Leu Ile 1220 Leu	Glu Tyr Gln Leu 1205 Pro Ala	Gly Arg Glu 1190 Arg Tyr His	Thr Val 1179 Ser Asn Glu	Ser 1160 Val Ala Met Lys Phe 1240	Lys Lys Ser Gly Ala 1229 Leu	Pro Glu Val Ala 1210 Glu Glu Gln	Leu Ile Arg 1199 His Asp	Lys Leu 1180 Lys Ala Thr	His 1169 Ile Ser Val Lys Cys 1249	1150 Glu Arg Arg Val Met 1230 Ala	Ser Leu Lys Leu 1215 Gln Gly	Thr Ser Gln 1200 Glu Glu Glu Asn
Lys Ser Lys 1185 Gln Leu Ile	Ser 1170 Leu Gln Leu Met	Thr 1155 Tyr Cys Arg Gln Arg 1235 Asn	1140 Glu Asn Val Leu Ile 1220 Leu	Glu Tyr Gln Leu 1205 Pro Ala	Gly Arg Glu 1190 Arg Tyr His	Thr Val 1175 Ser Asn Glu Glu Leu	Ser 1160 Val 5 Ala Met Lys Phe 1240 His	Lys Lys Ser Gly Ala 1229 Leu	Pro Glu Val Ala 1210 Glu Glu Gln	Leu Ile Arg 1199 His Asp	Lys Leu 1180 Lys Ala Thr Phe Asn	His 1169 Ile Ser Val Lys Cys 1249 Leu	1150 Glu Arg Arg Val Met 1230 Ala	Ser Leu Lys Leu 1215 Gln Gly	Thr Ser Gln 1200 Glu Glu Glu Asn
Lys Ser Lys 1185 Gln Leu Ile	Lys Ser 1170 Leu Gln Leu Met Gln 1250	Thr 1155 Tyr Cys Arg Gln Arg 1235 Asn	1140 Glu Asn Val Leu Ile 1220 Leu Gln	Glu Tyr Gln Leu 1205 Pro Ala Ala	Gly Arg Glu 1190 Arg Tyr His	Thr Val 1175 Ser Asn Glu Glu Leu 1255	Ser 1160 Val Ala Met Lys Phe 1240 His	Lys Lys Ser Gly Ala 1229 Leu Lys	Pro Glu Val Ala 1210 Glu Gln His	Leu Ile Arg 1199 His O Asp Asn Ile	Lys Leu 1186 Lys Ala Thr Phe Asn 1266	His 1169 Ile Ser Val Lys Cys 1249 Leu	Arg Arg Val Met 1230 Ala Phe	Leu Lys Leu 1215 Gln Gly Leu	Thr Ser Gln 1200 Glu Glu Asn Asn
Lys Ser Lys 1185 Gln Leu Ile	Lys Ser 1170 Leu Gln Leu Met Gln 1250	Thr 1155 Tyr Cys Arg Gln Arg 1235 Asn	1140 Glu Asn Val Leu Ile 1220 Leu Gln	Glu Tyr Gln Leu 1205 Pro Ala Ala	Gly Arg Glu 1190 Arg Tyr His Leu Ala	Val 1175 Ser Asn Glu Glu Leu 1255 Val	Ser 1160 Val Ala Met Lys Phe 1240 His	Lys Lys Ser Gly Ala 1229 Leu Lys	Pro Glu Val Ala 1210 Glu Gln His	Leu Ile Arg 1199 His Asp Asn Ile His	Lys Leu 1180 Lys Ala Thr Phe Asn 1260 Ile	His 1169 Ile Ser Val Lys Cys 1249 Leu	Arg Arg Val Met 1230 Ala Phe	Leu Lys Leu 1215 Gln Gly Leu	Thr Ser Gln 1200 Glu Glu Asn Asn
Lys Ser Lys 1185 Gln Leu Ile Gln Pro 1265	Ser 1170 Leu Gln Leu Met Gln 1250 Gly	Thr 1155 Tyr Cys Arg Gln Arg 1235 Asn	1140 Glu Asn Val Leu Ile 1220 Leu Gln	Glu Tyr Gln Leu 1205 Pro Ala Ala Glu	Gly Arg Glu 1190 Arg Tyr His Leu Ala 1270	Thr Val 1179 Ser Asn Glu Glu Leu 1259 Val	Ser 1160 Val 6 Ala Met Lys Phe 1240 His 6	Lys Lys Ser Gly Ala 1229 Leu Lys Met	Pro Glu Val Ala 1210 Glu Gln His	Leu Ile Arg 1199 His Asp Asn Ile His 1279	Lys Leu 1180 Lys Ala Thr Phe Asn 1260 Ile	His 1169 Ile Ser Val Lys Cys 1249 Leu Phe	Arg Arg Val Met 1230 Ala Met	Leu Lys Leu 1215 Gln Gly Leu Asn	Thr Ser Gln 1200 Glu Glu Asn Asn Asn 1280
Lys Ser Lys 1185 Gln Leu Ile Gln Pro 1265	Ser 1170 Leu Gln Leu Met Gln 1250 Gly	Thr 1155 Tyr Cys Arg Gln Arg 1235 Asn	1140 Glu Asn Val Leu Ile 1220 Leu Gln	Glu Tyr Gln Leu 1205 Pro Ala Ala Glu	Gly Arg Glu 1190 Arg Tyr His Leu Ala 1270	Thr Val 1179 Ser Asn Glu Glu Leu 1259 Val	Ser 1160 Val 6 Ala Met Lys Phe 1240 His	Lys Lys Ser Gly Ala 1229 Leu Lys Met	Pro Glu Val Ala 1210 Glu Gln His	Leu Ile Arg 1199 His Asp Asn Ile His 1279	Lys Leu 1180 Lys Ala Thr Phe Asn 1260 Ile	His 1169 Ile Ser Val Lys Cys 1249 Leu	Arg Arg Val Met 1230 Ala Met	Leu Lys Leu 1215 Gln Gly Leu Asn	Thr Ser Gln 1200 Glu Glu Asn Asn Asn 1280
Lys Ser Lys 1185 Gln Leu Ile Gln Pro 1265	Ser 1170 Leu Gln Leu Met Gln 1250 Gly	Thr 1155 Tyr Cys Arg Gln Arg 1235 Asn	1140 Glu Asn Val Leu Ile 1220 Leu Gln	Glu Tyr Gln Leu 1205 Pro Ala Ala Glu	Gly Arg Glu 1190 Arg Tyr His Leu Ala 1270 Glu	Thr Val 1179 Ser Asn Glu Glu Leu 1259 Val	Ser 1160 Val 6 Ala Met Lys Phe 1240 His	Lys Lys Ser Gly Ala 1229 Leu Lys Met	Pro Glu Val Ala 1210 Glu Gln His	Leu Ile Arg 1199 His Asp Asn Ile His 1279 Val	Lys Leu 1180 Lys Ala Thr Phe Asn 1260 Ile	His 1169 Ile Ser Val Lys Cys 1249 Leu Phe	Arg Arg Val Met 1230 Ala Met	Leu Lys Leu 1215 Gln Gly Leu Asn	Thr Ser Gln 1200 Glu Glu Asn Asn Asn Val
Lys Ser Lys 1185 Gln Leu Ile Gln Pro 1265 Phe	Ser 1170 Leu Gln Leu Met Gln 1250 Gly	Thr 1155 Tyr Cys Arg Gln Arg 1235 Asn Ile	1140 Glu Asn Val Leu Ile 1220 Leu Gln Leu Cys	Glu Tyr Gln Leu 1205 Pro Ala Ala Glu Ser 1285	Gly Arg Glu 1190 Arg Tyr His Leu Ala 1270 Glu	Val 1179 Ser Asn Glu Glu Leu 1259 Val	Ser 1160 Val 6 Ala Met Lys Phe 1240 His 6 Thr	Lys Lys Ser Gly Ala 1229 Leu Lys Met	Pro Glu Val Ala 1210 Glu Gln His Gln Arg 1290	Leu Ile Arg 1199 His Asp Asn Ile His 1279 Val	Lys Leu 1180 Lys Ala Thr Phe Asn 1260 Ile Val	His 1169 Ile Ser Val Lys Cys 1249 Leu Phe	Arg Arg Val Met 1230 Ala Phe Met	Leu Lys Leu 1215 Gln Gly Leu Asn Phe 1295	Thr Ser Gln 1200 Glu Glu Asn Asn Asn 1280 Val
Lys Ser Lys 1185 Gln Leu Ile Gln Pro 1265 Phe	Ser 1170 Leu Gln Leu Met Gln 1250 Gly	Thr 1155 Tyr Cys Arg Gln Arg 1235 Asn Ile	1140 Glu Asn Val Leu Ile 1220 Leu Gln Leu Cys Glu	Glu Tyr Gln Leu 1205 Pro Ala Ala Glu Ser 1285 Thr	Gly Arg Glu 1190 Arg Tyr His Leu Ala 1270 Glu	Val 1179 Ser Asn Glu Glu Leu 1259 Val	Ser 1160 Val 6 Ala Met Lys Phe 1240 His 6 Thr	Lys Ser Gly Ala 1225 Leu Lys Met Glu Asn	Pro Glu Val Ala 1210 Glu Gln His Gln Arg 1290 Val	Leu Ile Arg 1199 His Asp Asn Ile His 1279 Val	Lys Leu 1180 Lys Ala Thr Phe Asn 1260 Ile Val	His 1169 Ile Ser Val Lys Cys 1249 Leu Phe	Arg Arg Val Met 1230 Ala Phe Met	Leu Lys Leu 1215 Gln Gly Leu Asn Phe 1295 Phe	Thr Ser Gln 1200 Glu Glu Asn Asn Asn 1280 Val
Lys Ser Lys 1185 Gln Leu Ile Gln Pro 1265 Phe His	Ser 1170 Leu Gln Leu Met Gln 1250 Gly Gln Cys	Thr 1155 Tyr Cys Arg Gln Arg 1235 Asn Ile Leu	1140 Glu Asn Val Leu Ile 1220 Leu Gln Leu Cys Glu 1300	Glu Tyr Gln Leu 1205 Pro Ala Ala Glu Ser 1285 Thr	Gly Arg Glu 1190 Arg Tyr His Leu Ala 1270 Glu His	Thr Val 1179 Ser Asn Glu Glu Leu 1259 Val Ile Gly	Ser 1160 Val Ala Met Lys Phe 1240 His Thr Asn	Lys Lys Ser Gly Ala 1229 Leu Lys Met Glu Asn 1309	Pro Glu Val Ala 1210 Glu Gln His Gln Arg 1290 Val	Leu Ile Arg 1199 His Asp Asn Ile His 1279 Val Gln	Lys Leu 1180 Lys Ala Thr Phe Asn 1260 Ile Val	His 1169 Ile Ser Val Lys Cys 1249 Leu Phe Gln	Arg Arg Val Met 1230 Ala Phe Met Lys 1310	Leu Lys Leu 1215 Gln Gly Leu Asn Phe 1295 Phe	Thr Ser Gln 1200 Glu Glu Asn Asn Asn Leu
Lys Ser Lys 1185 Gln Leu Ile Gln Pro 1265 Phe His	Ser 1170 Leu Gln Leu Met Gln 1250 Gly Gln Cys	Thr 1155 Tyr Cys Arg Gln Arg 1235 Asn Ile Leu Ile	1140 Glu Asn Val Leu Ile 1220 Leu Gln Leu Cys Glu 1300 Val	Glu Tyr Gln Leu 1205 Pro Ala Ala Glu Ser 1285 Thr	Gly Arg Glu 1190 Arg Tyr His Leu Ala 1270 Glu His	Thr Val 1179 Ser Asn Glu Glu Leu 1259 Val Ile Gly	Ser 1160 Val Ala Met Lys Phe 1240 His Thr Asn Arg	Lys Lys Ser Gly Ala 1225 Leu Lys Met Glu Asn 1305 Lys	Pro Glu Val Ala 1210 Glu Gln His Gln Arg 1290 Val	Leu Ile Arg 1199 His Asp Asn Ile His 1279 Val Gln	Lys Leu 1180 Lys Ala Thr Phe Asn 1260 Ile Val	His 1169 Ile Ser Val Lys Cys 1249 Leu Phe Gln Ile	Arg Arg Val Met 1230 Ala Phe Met His Lys 1310 Cys	Leu Lys Leu 1215 Gln Gly Leu Asn Phe 1295 Phe	Thr Ser Gln 1200 Glu Glu Asn Asn Asn Leu
Lys Ser Lys 1185 Gln Leu Ile Gln Pro 1265 Phe His	Ser 1170 Leu Gln Leu Met Gln 1250 Gly Gln Cys	Thr 1155 Tyr Cys Arg Gln Arg 1235 Asn Ile Leu Ile Ile 1315	1140 Glu Asn Val Leu Ile 1220 Leu Gln Leu Cys Glu 1300 Val	Glu Tyr Gln Leu 1205 Pro Ala Ala Glu Ser 1285 Thr	Gly Arg Glu 1190 Arg Tyr His Leu Ala 1270 Glu His Ala	Thr Val 1179 Ser Asn Glu Glu Leu 1259 Val Ile Gly Glu	Ser 1160 Val Ala Met Lys Phe 1240 His Thr Asn Arg	Lys Lys Ser Gly Ala 1225 Leu Lys Met Glu Asn 1305 Lys	Pro Glu Val Ala 1210 Glu Gln His Gln Arg 1290 Val Phe	Leu Ile Arg 1199 His Asp Asn Ile His 1279 Val Gln Ile	Lys Leu 1180 Lys Ala Thr Phe Asn 1260 Ile Val Tyr Lys	His 1169 Ile Ser Val Lys Cys 1249 Leu Phe Gln Ile Lys 1329	Arg Arg Val Met 1230 Ala Phe Met His Lys 1310 Cys	Leu Lys Leu 1215 Gln Gly Leu Asn Phe 1295 Phe Gln	Thr Ser Gln 1200 Glu Glu Asn Asn L280 Val Leu Asp
Lys Ser Lys 1185 Gln Leu Ile Gln Pro 1265 Phe His	Ser 1170 Leu Gln Leu Met Gln 1250 Gly Gly Thr	Thr 1155 Tyr Cys Arg Gln Arg 1235 Asn Ile Leu Ile 1315 Met	1140 Glu Asn Val Leu Ile 1220 Leu Gln Leu Cys Glu 1300 Val	Glu Tyr Gln Leu 1205 Pro Ala Ala Glu Ser 1285 Thr	Gly Arg Glu 1190 Arg Tyr His Leu Ala 1270 Glu His Ala	Thr Val 1179 Ser Asn Glu Glu Leu 1259 Val Ile Gly Glu Val	Ser 1160 Val Ala Met Lys Phe 1240 His Thr Asn Arg Gly 1320 Asn	Lys Lys Ser Gly Ala 1225 Leu Lys Met Glu Asn 1305 Lys	Pro Glu Val Ala 1210 Glu Gln His Gln Arg 1290 Val Phe	Leu Ile Arg 1199 His Asp Asn Ile His 1279 Val Gln Ile	Lys Leu 1180 Lys Ala Thr Phe Asn 1260 Ile Val Tyr Lys Asp	His 1169 Ile Ser Val Lys Cys 1249 Leu Phe Gln Ile Lys 1329 Val	Arg Arg Val Met 1230 Ala Phe Met His Lys 1310 Cys	Leu Lys Leu 1215 Gln Gly Leu Asn Phe 1295 Phe Gln	Thr Ser Gln 1200 Glu Glu Asn Asn L280 Val Leu Asp
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Lys Ser Lys 1185 Gln Leu Ile Gln Pro 1265 Phe His Gln Met	Lys Ser 1170 Leu Gln Leu Met Gln 1250 Gly Gln Cys Thr Val 1330 Asn	Thr 1155 Tyr Cys Arg Gln Arg 1235 Asn Ile Leu Ile Ile 1315 Met	1140 Glu Asn Val Leu Ile 1220 Leu Gln Leu Cys Glu 1300 Val Ala	Glu Tyr Gln Leu 1205 Pro Ala Ala Glu Ser 1285 Thr Lys	Gly Arg Glu 1190 Arg Tyr His Leu Ala 1270 Glu His Ala Leu Ser	Thr Val 1179 Ser Asn Glu Glu Leu 1259 Val Ile Gly Glu Val 1339 Phe	Ser 1160 Val Ala Met Lys Phe 1240 His Thr Asn Arg Gly 1320 Asn	Lys Ala 1225 Leu Lys Met Glu Asn 1305 Lys Ser	Pro Glu Val Ala 1210 Glu Gln His Gln Arg 1290 Val Phe Gly	Leu Ile Arg 1199 His Asp Asn Ile His 1279 Val Gln Ile Glu Ile	Lys Leu 1180 Lys Ala Thr Phe Asn 1260 Val Tyr Lys Asp 1340 Gln	His 1169 Ile Ser Val Lys Cys 1249 Leu Phe Gln Ile Lys 1329 Val	Arg Arg Val Met 1230 Ala Phe Met His Lys 1310 Cys Leu	Leu Lys Leu 1215 Gln Gly Leu Asn Phe 1295 Phe Gln Val	Thr Ser Gln 1200 Glu Glu Asn Asn Asn Leu Asp Phe Ser
Lys Ser Lys 1185 Gln Leu Ile Gln Pro 1265 Phe His Gln Met Tyr 1345	Ser 1170 Leu Gln Leu Met Gln 1250 Gly Gly Thr Val 1330 Asn	Thr 1155 Tyr Cys Arg Gln Arg 1235 Asn Ile Leu Ile 1315 Met Asp	1140 Glu Asn Val Leu Ile 1220 Leu Gln Leu Cys Glu 1300 Val Ala Arg	Glu Tyr Gln Leu 1205 Pro Ala Ala Glu Ser 1285 Thr Lys Glu Ala	Gly Arg Glu 1190 Arg Tyr His Leu Ala 1270 Glu 6 His Ala Leu Ser 1350	Thr Val 117! Ser Asn Glu Glu Leu 125! Val Ile Gly Glu Val 133! Phe	Ser 1160 Val Ala Met Lys Phe 1240 His Thr Asn Arg Gly 1320 Asn	Lys Lys Ser Gly Ala 1225 Leu Lys Met Glu Asn 1305 Lys Ser Thr	Pro Glu Val Ala 1210 Glu Gln His Gln Arg 1290 Val Phe Gly Leu	Leu Ile Arg 1199 His Asp Asn Ile His 1279 Val Coln Ile Glu Ile 1359	Lys Leu 1180 Lys Ala Thr Phe Asn 1260 Ile Val Tyr Lys Asp 1340 Gln	His 1169 Ile Ser Val Lys Cys 1249 Leu Phe Gln Ile Lys 1329 Val	Arg Arg Val Met 1230 Ala Phe Met His Lys 1310 Cys Leu Met	Leu Lys Leu 1215 Gln Gly Leu Asn Phe 1295 Phe Gln Val	Thr Ser Gln 1200 Glu Glu Asn Asn Asn Leu Asp Phe Ser 1360
Lys Ser Lys 1185 Gln Leu Ile Gln Pro 1265 Phe His Gln Met Tyr 1345	Ser 1170 Leu Gln Leu Met Gln 1250 Gly Gly Thr Val 1330 Asn	Thr 1155 Tyr Cys Arg Gln Arg 1235 Asn Ile Leu Ile 1315 Met Asp	1140 Glu Asn Val Leu Ile 1220 Leu Gln Leu Cys Glu 1300 Val Ala Arg	Glu Tyr Gln Leu 1205 Pro Ala Ala Glu Ser 1285 Thr Lys Glu Ala Met	Gly Arg Glu 1190 Arg Tyr His Leu Ala 1270 Glu 6 His Ala Leu Ser 1350 Asp	Thr Val 117! Ser Asn Glu Glu Leu 125! Val Ile Gly Glu Val 133! Phe	Ser 1160 Val Ala Met Lys Phe 1240 His Thr Asn Arg Gly 1320 Asn	Lys Lys Ser Gly Ala 1225 Leu Lys Met Glu Asn 1305 Lys Ser Thr	Pro Glu Val Ala 1210 Glu Gln His Gln Arg 1290 Val Phe Gly Leu Pro	Leu Ile Arg 1199 His Asp Asn Ile His 1279 Val Gln Ile Glu Ile 1359 Leu	Lys Leu 1180 Lys Ala Thr Phe Asn 1260 Ile Val Tyr Lys Asp 1340 Gln	His 1169 Ile Ser Val Lys Cys 1249 Leu Phe Gln Ile Lys 1329 Val	Arg Arg Val Met 1230 Ala Phe Met His Lys 1310 Cys Leu Met	Leu Lys Leu 1215 Gln Gly Leu Asn Phe 1295 Phe Gln Val Arg	Thr Ser Gln 1200 Glu Glu Asn Asn Asn Leu Asp Phe Ser 1360 Ile
Lys Ser Lys 1185 Gln Leu Ile Gln Pro 1265 Phe His Gln Met Tyr 1345	Ser 1170 Leu Gln Leu Met Gln 1250 Gly Gly Thr Val 1330 Asn	Thr 1155 Tyr Cys Arg Gln Arg 1235 Asn Ile Leu Ile 1315 Met Asp	1140 Glu Asn Val Leu Ile 1220 Leu Gln Leu Cys Glu 1300 Val Ala Arg	Glu Tyr Gln Leu 1205 Pro Ala Ala Glu Ser 1285 Thr Lys Glu Ala	Gly Arg Glu 1190 Arg Tyr His Leu Ala 1270 Glu His Ala Leu Ser 1350 Asp	Thr Val 117! Ser Asn Glu Glu Leu 125! Val Ile Gly Glu Val 133! Phe	Ser 1160 Val Ala Met Lys Phe 1240 His Thr Asn Arg Gly 1320 Asn	Lys Lys Ser Gly Ala 1225 Leu Lys Met Glu Asn 1305 Lys Ser Thr	Pro Glu Val Ala 1210 Glu Gln His Gln Arg 1290 Val Phe Gly Leu	Leu Ile Arg 1199 His Asp Asn Ile His 1279 Val Gln Ile Glu Ile 1359 Leu	Lys Leu 1180 Lys Ala Thr Phe Asn 1260 Ile Val Tyr Lys Asp 1340 Gln	His 1169 Ile Ser Val Lys Cys 1249 Leu Phe Gln Ile Lys 1329 Val	Arg Arg Val Met 1230 Ala Phe Met His Lys 1310 Cys Leu Met	Leu Lys Leu 1215 Gln Gly Leu Asn Phe 1295 Phe Gln Val	Thr Ser Gln 1200 Glu Glu Asn Asn Asn Leu Asp Phe Ser 1360 Ile

His Leu Val Glu Leu Leu Ala Val Cys Thr Glu Gly Lys Asn Val Tyr 1380 1385 Thr Glu Ile Lys Cys Asn Ser Leu Leu Pro Leu Asp Asp Ile Val Arg 1395 1400 Val Val Thr His Glu Asp Cys Ile Pro Glu Val Lys Ile Ala Tyr Ile 1410 1415 1420 Asn Phe Leu Asn His Cys Tyr Val Asp Thr Glu Val Glu Met Lys Glu 1430 1435 Ile Tyr Thr Ser Asn His Met Trp Lys Leu Phe Glu Asn Phe Leu Val 1445 1450 1455 Asp Ile Cys Arg Ala Cys Asn Asn Thr Ser Asp Arg Lys His Ala Asp 1460 1465 1470 Ser Val Leu Glu Lys Tyr Val Thr Glu Ile Val Met Ser Ile Val Thr 1480 Thr Phe Phe Ser Ser Pro Phe Ser Asp Gln Ser Thr Thr Leu Gln Thr 1495 1500 Arg Gln Pro Val Phe Val Gln Leu Leu Gln Gly Val Phe Arg Val Tyr 1510 1515 His Cys Asn Trp Leu Met Pro Ser Gln Lys Ala Ser Val Glu Ser Cys 1525 1530 Ile Arg Val Leu Ser Asp Val Ala Lys Ser Arg Ala Ile Ala Ile Pro 1540 1545 Val Asp Leu Asp Ser Gln Val Asn Asn Leu Phe Leu Lys Ser His Asn 1555 1560 1565 Ile Val Gln Lys Thr Ala Met Asn Trp Arg Leu Ser Ala Arg Asn Ala 1575 1580 Ala Arg Arg Asp Asp Val Leu Ala Ala Ser Arg Asp Tyr Arg Asn Ile 1590 1595 Ile Glu Arg Leu Gln Asp Ile Val Ser Ala Leu Glu Asp Arg Leu Arg 1610 1605 Pro Leu Val Gln Ala Glu Leu Ser Val Leu Val Asp Val Leu His Arg 1625 Pro Glu Leu Leu Phe Pro Glu Asn Thr Asp Ala Arg Arg Lys Cys Glu 1640 1645 Ser Gly Gly Phe Ile Cys Lys Leu Ile Lys His Thr Lys Gln Leu Leu 1655 1660 Glu Glu Asn Glu Glu Lys Leu Cys Ile Lys Val Leu Gln Thr Leu Arg 1670 1675 Glu Met Met Thr Lys Asp Arg Gly Tyr Gly Glu Lys Gln Ile Ser Ile 1690 1685 Asp Glu Leu Glu Asn Ala Glu Leu Pro Gln Pro Pro Glu Ala Glu Asn 1705 1700 Ser Thr Glu Glu Leu Glu Pro Ser Pro Pro Leu Arg Gln Leu Glu Asp 1720 1725 1715 His Lys Arg Gly Glu Ala Leu Arg Gln Ile Leu Val Asn Arg Tyr Tyr 1740 1735 Gly Asn Ile Arg Pro Ser Gly Arg Arg Glu Glu Leu Thr Ser Phe Gly 1745 1750 1755 Asn Gly Pro Leu Ser Pro Gly Gly Pro Ser Lys Pro Gly Gly Gly 1765 1770 Gly Gly Pro Gly Ser Gly Ser Thr Ser Arg Gly Glu Met Ser Leu Ala 1780 1785 Glu Val Gln Cys His Leu Asp Lys Glu Gly Ala Ser Asn Leu Val Ile 1795 1800 1805 Asp Leu Ile Met Asn Ala Ser Ser Asp Arg Val Phe His Glu Ser Ile 1815 1820 Leu Leu Ala Ile Ala Leu Leu Glu Gly Gly Asn Thr Thr Ile Gln His 1825 1830 1835 Ser Phe Phe Cys Arg Leu Thr Glu Asp Lys Lys Ser Glu Lys Phe Phe 1845 1850

Lys Val Phe Tyr Asp Arq Met Lys Val Ala Gln Gln Glu Ile Lys Ala 1865 Thr Val Thr Val Asn Thr Ser Asp Leu Gly Asn Lys Lys Lys Asp Asp 1875 1880 1885 Glu Val Asp Arg Asp Ala Pro Ser Arg Lys Lys Ala Lys Glu Pro Thr 1895 1900 Thr Gln Ile Thr Glu Glu Val Arg Asp Gln Leu Leu Glu Ala Ser Ala 1910 1915 Ala Thr Arg Lys Ala Phe Thr Thr Phe Arg Arg Glu Ala Asp Pro Asp 1925 1930 1935 Asp His Tyr Gln Ser Gly Glu Gly Thr Gln Ala Thr Thr Asp Lys Ala 1945 1940 Lys Asp Asp Leu Glu Met Ser Ala Val Ile Thr Ile Met Gln Pro Ile 1960 1965 Leu Arg Phe Leu Gln Leu Leu Cys Glu Asn His Asn Arg Asp Leu Gln 1975 1980 Asn Phe Leu Arg Cys Gln Asn Asn Lys Thr Asn Tyr Asn Leu Val Cys 1990 1995 Glu Thr Leu Gln Phe Leu Asp Cys Ile Cys Gly Ser Thr Thr Gly Gly 2005 2010 2015 Leu Gly Leu Leu Gly Leu Tyr Ile Asn Glu Lys Asn Val Ala Leu Ile 2025 2030 Asn Gln Thr Leu Glu Ser Leu Thr Glu Tyr Cys Gln Gly Pro Cys His 2035 2040 Glu Asn Gln Asn Cys Ile Ala Thr His Glu Ser Asn Gly Ile Asp Ile 2050 2055 2060 Ile Thr Ala Leu Ile Leu Asn Asp Ile Asn Pro Leu Gly Lys Lys Arg 2065 2070 2075 Met Asp Leu Val Leu Glu Leu Lys Asn Asn Ala Ser Lys Leu Leu Leu 2085 2090 2095 Ala Ile Met Glu Ser Arg His Asp Ser Glu Asn Ala Glu Arg Ile Leu 2100 2105 Tyr Asn Met Arg Pro Lys Glu Leu Val Glu Val Ile Lys Lys Ala Tyr 2115 2120 2125 Met Gln Gly Glu Val Glu Phe Glu Asp Gly Glu Asn Gly Glu Asp Gly 2130 2135 2140 Ala Ala Ser Pro Arg Asn Val Gly His Asn Ile Tyr Ile Leu Ala His 2145 2150 2155 2160 Gln Leu Ala Arg His Asn Lys Glu Leu Gln Thr Met Leu Lys Pro Gly 2165 2170 2175 Gly Gln Val Asp Gly Asp Glu Ala Leu Glu Phe Tyr Ala Lys His Thr 2180 2185 Ala Gln Ile Glu Ile Val Arg Leu Asp Arg Thr Met Glu Gln Ile Val 2195 2200 2205 Phe Pro Val Pro Ser Ile Cys Glu Phe Leu Thr Lys Glu Ser Lys Leu 2220 2210 2215 Arg Ile Tyr Tyr Thr Thr Glu Arg Asp Glu Gln Gly Ser Lys Ile Asn 2225 2230 2235 2240 Asp Phe Phe Leu Arg Ser Glu Asp Leu Phe Asn Glu Met Asn Trp Gln 2245 2250 2255 Lys Lys Leu Arg Ala Gln Pro Val Leu Tyr Trp Cys Ala Arg Asn Met 2260 2265 2270 Ser Phe Trp Ser Ser Ile Ser Phe Asn Leu Ala Val Leu Met Asn Leu 2275 2280 2285 Leu Val Ala Phe Phe Tyr Pro Phe Lys Gly Val Arg Gly Gly Thr Leu 2290 2295 2300 Glu Pro His Trp Ser Gly Leu Leu Trp Thr Ala Met Leu Ile Ser Leu 2305 2310 2315 Ala Ile Val Ile Ala Leu Pro Lys Pro His Gly Ile Arg Ala Leu Ile 2325 2330

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Ala Ser Thr Ile Leu Arq Leu Ile Phe Ser Val Gly Leu Gln Pro Thr
        2340
                      2345
Leu Phe Leu Leu Gly Ala Phe Asn Val Cys Asn Lys Ile Ile Phe Leu
                          2365
            2360
Met Ser Phe Val Gly Asn Cys Gly Thr Phe Thr Arg Gly Tyr Arg Ala
                      2380
        2375
Met Val Leu Asp Val Glu Phe Leu Tyr His Leu Leu Tyr Leu Leu Ile
     2390 2395 2400
Cys Ala Met Gly Leu Phe Val His Glu Phe Phe Tyr Ser Leu Leu
          2405 2410 2415
Phe Asp Leu Val Tyr Arg Glu Glu Thr Leu Leu Asn Val Ile Lys Ser
       2420 2425 2430
Val Thr Arg Asn Gly Arg Pro Ile Ile Leu Thr Ala Ala Leu Ala Leu
  2435 2440 2445
Ile Leu Val Tyr Leu Phe Ser Ile Val Gly Tyr Leu Phe Phe Lys Asp
       2455 2460
Asp Phe Ile Leu Glu Val Asp Arg Leu Pro Asn Glu Thr Ala Gly Pro
      2470 2475
Glu Thr Gly Glu Ser Leu Ala Asn Asp Phe Leu Tyr Ser Asp Val Cys
          2485 2490 2495
Arg Val Glu Thr Gly Glu Asn Cys Thr Ser Pro Ala Pro Lys Glu Glu
        2500 2505 2510
Leu Leu Pro Val Glu Glu Thr Glu Gln Asp Lys Glu His Thr Cys Glu
                   2520 2525
Thr Leu Leu Met Cys Ile Val Thr Val Leu Ser His Gly Leu Arg Ser
        2535
                              2540
Gly Gly Gly Val Gly Asp Val Leu Arg Lys Pro Ser Lys Glu Glu Pro
2545 2550 2555
Leu Phe Ala Ala Arg Val Ile Tyr Asp Leu Leu Phe Phe Met Val
           2565
                         2570 2575
Ile Ile Ile Val Leu Asn Leu Ile Phe Gly Val Ile Ile Asp Thr Phe
        2580
                      2585
Ala Asp Leu Arg Ser Glu Lys Gln Lys Lys Glu Glu Ile Leu Lys Thr
     2595 2600 2605
Thr Cys Phe Ile Cys Gly Leu Glu Arg Asp Lys Phe Asp Asn Lys Thr
  2610 . 2615 2620
Val Thr Phe Glu Glu His Ile Lys Glu Glu His Asn Met Trp His Tyr
2625 2630 2635 2640
Leu Cys Phe Ile Val Leu Val Lys Val Lys Asp Ser Thr Glu Tyr Thr
         2645 2650 2655
Gly Pro Glu Ser Tyr Val Ala Glu Met Ile Arg Glu Arg Asn Leu Asp
        2660 2665 2670
Trp Phe Pro Arg Met Arg Ala Met Ser Leu Val Ser Ser Asp Ser Glu
     2675 2680
Gly Glu Gln Asn Glu Leu Arg Asn Leu Gln Glu Lys Leu Glu Ser Thr
  2690 2695
                               2700
Met Lys Leu Val Thr Asn Leu Ser Gly Gln Leu Ser Glu Leu Lys Asp
2705 2710 2715 2720
Gln Met Thr Glu Gln Arg Lys Gln Lys Gln Arg Ile Gly Leu Leu Gly
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His Pro Pro His Met Asn Val Asn Pro Gln Gln Pro Ala
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                      2745
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<211> 2710

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:/note =

synthetic construct

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Leu	Tyr	Ala	Glu	Gly	Ser	Thr	Asn	Gly	Phe	Ile	Ser	Thr	Leu	Gly	Leu
	-		20	-				25					30	_	
Val	Asp	Asp 35	Arg	Cys	Val	Val	Gln 40	Pro	Glu	Ala	Gly	Asp 45	Leu	Asn	Asn
Pro	Pro 50		Lys	Phe	Arg	Asp 55	Cys	Leu	Phe	Lys	Leu 60	Cys	Pro	Met	Asn
Ara	Tyr	Ser	Ala	Gln	Lvs		Phe	Trp	Lvs	Ala		Lvs	Pro	Glv	Ala
65	-1-				70				1	75		-1-		1	80
	Ser	Thr	Thr	Asp 85		Val	Leu	Leu	Asn 90		Leu	His	His	Ala 95	Ala
Asp	Leu	Glu	Lys 100	-	Gln	Asn	Glu	Thr 105	Glu	Asn	Arg	Lys	Leu 110	Leu	Gly
Thr	Val			Tyr	Gly	Asn			Gln	Leu	Leu			Lys	Ser
_	_	115	_			_	120	_	_	_		125	_	~-3	-
	Lys 130	_				135					140				
Asn	Ala	Met	Arg	Val		Leu	Asp	Glu	Ala		Asn	Glu	Gly	Ser	
145					150					155				_	160
Phe	Tyr	Ile	Gln	Pro 165	Phe	Tyr	Lys	Leu	Arg 170	Ser	Ile	Gly	Asp	Ser 175	Val
Val	Ile	Gly	Asp 180	Lys	Val	Val	Leu	Asn 185	Pro	Val	Asn	Ala	Gly 190	Gln	Pro
Leu	His	Ala 195	Ser	Ser	His	Gln	Leu 200	Val	Asp	Asn	Pro	Gly 205	Cys	Asn	Glu
Val	Asn 210		Val	Asn	Cys	Asn 215		Ser	Trp	Lys	Ile 220		Leu	Phe	Met
Tara	Trp	Sor	7 an	7 an	Tuc		Nan	Tle	Len	Larc		Glv	Λen	Val.	Val
225	пр	SCI	лэр	ASII	230	Top	тэр	110	шец	235	Cry	OLY	,,pp	٧٠٠	240
	Leu	Dhe	иie	בות		Gln	Glu	Lve	Dhe		Thr	Cvs	Δsn	Glu	
Arg	пец	FIIC	1115	245	OIU	GIII	GIU	цуз	250	LCu	1111	Cys	nop	255	1110
Δra	Lys	Lvs	Gln		Val	Phe	Len	Ara		Thr	Glv	Ara	Gln		Ala
arg	цуб	ט עם	260	1115	vai	1110	cu	265				••••	270	001	
Thr	Ser	Ala 275		Ser	Ser	Lys	Ala 280		Trp	Glu	Val	Glu 285		Val	Gln
His	Asp		Cys	Arg	Gly	_		Gly	Tyr	Trp			Leu	Phe	Arg
Dha	290	TT	T 011	7 T -	mh w	295	TT	TT	T 011	77.	300	C1.,	T/al	7 an	Dro
	Lys	птв	ьец	Ала		GIY	птъ	TAT	пеп	315	Ата	GIU	vaı	Asp	320
305	Phe	Glu	Glu	Glu	310	Len	Glu	Dhe	Gln		Sar	V = 1	λen	Pro	
				325					330					335	
Gln	Asp	Ala	Ser	Arg	Ser	Arg	Leu	Arg 345	Asn	Ala	Gln	Glu	Lys 350	Met	Val
Tyr	Ser	Leu 355	Val	Ser	Val	Pro	Glu 360	Gly	Asn	Asp	Ile	Ser 365	Ser	Ile	Phe
Glu	Leu 370		Pro	Thr	Thr	Leu 375		Gly	Gly	Asp	Ser 380		Val	Pro	Arg
Δen	Ser	Tvr	Val	Ara	Len		Hi≎	Leu	Cvs	Thr		Thr	Trn	۷al	His
385		- 7 -	•	9	390	9	1110	200	CyD	395	11011				400
	Thr	Acn	Tle	Pro		Agn	T.ve	Glu	Glu		J.v.c	Pro	۷a٦	Met	
JC1	****			405			-75	J. U	410		_, 5			415	
Lvs	Ile	Glv	Thr		Pro	Len	Lve	Glu		Lvs	Glu	Ala	Phe		Ile
-,5	-10	O ± Y	420			u	_,,5	425		_75			430		
Val	Pro	Val 435		Pro	Ala	Glu	Val 440		Asp	Leu	Asp	Phe 445		Asn	Asp
Δ 1-	Ser		Va 1	Len	Glv	Ser		ΔΊ⇒	Glar.	Luc	T.e.v		Tave	Glv	Thr
ντα	450	пув	vaı	ъęи	GIY	455	116	AIG	GIĀ	пур	460	Gru	Буб	Cry	1111

Ile 465	Thr	Gln	Asn	Glu	Arg	Arg	Ser	Val	Thr	Lys 475	Leu	Leu	Glu	Asp	Leu 480
	Tyr	Phe	Val	Thr 485	Gly	Gly	Thr	Asn	Ser 490		Gln	Asp	Val	Leu 495	Glu
Val	Val	Phe	Ser 500	Lys	Pro	Asn	Arg	Glu 505	Arg	Gln	Lys	Leu	Met 510	Arg	Glu
Gln	Asn	Ile 515	Leu	Lys	Gln	Ile	Phe 520	Lys	Leu	Leu	Gln	Ala 525	Pro	Phe	Thr
_	530		Asp			535					540				
545			Pro		550					555					560
			Gln	565					570					575	
		_	Phe 580 Thr					585					590		
_		595	Ala				600				_	605			
	610					615	_				620				
625			Pro		630					635					640
		_	Ser	645					650					655	
			Thr 660					665					670		
Ser	Arg	Phe 675	Glu	Phe	Glu	Gly	Val 680	Ser	Thr	Gly	Glu	Asn 685	Ala	Leu	Glu
	690		Asp			695					700				
Lys	Glu	Ile	Arq	Ser	Lys	Ser	Val	Ara	Glu	Leu	Ala	Gln	Asp	Ala	Lvs
705					710					715					720
705			Lys		710					715					720
705 Glu Leu	Gly Asn	Gln Leu	Lys Phe 740	Glu 725 Ala	710 Asp Arg	Arg Met	Asp Cys	Val Leu 745	Leu 730 Asp	715 Ser Arg	Tyr Gln	Tyr Tyr	Arg Leu 750	Tyr 735 Ala	720 Gln Ile
705 Glu Leu	Gly Asn	Gln Leu	Lys Phe	Glu 725 Ala	710 Asp Arg	Arg Met	Asp Cys	Val Leu 745	Leu 730 Asp	715 Ser Arg	Tyr Gln	Tyr Tyr	Arg Leu 750	Tyr 735 Ala	720 Gln Ile
705 Glu Leu Asn Ser	Gly Asn Glu Asp 770	Gln Leu Ile 755 Glu	Lys Phe 740 Ser Asn	Glu 725 Ala Gly Leu	710 Asp Arg Gln Pro	Arg Met Leu Tyr 775	Asp Cys Asp 760 Asp	Val Leu 745 Val Leu	Leu 730 Asp Asp	715 Ser Arg Leu Ala	Tyr Gln Ile Ser 780	Tyr Tyr Leu 765 Phe	Arg Leu 750 Arg Cys	Tyr 735 Ala Cys Arg	720 Gln Ile Met Leu
705 Glu Leu Asn Ser	Gly Asn Glu Asp 770	Gln Leu Ile 755 Glu	Lys Phe 740 Ser	Glu 725 Ala Gly Leu	710 Asp Arg Gln Pro	Arg Met Leu Tyr 775 Asp	Asp Cys Asp 760 Asp	Val Leu 745 Val Leu Asp	Leu 730 Asp Asp Arg	715 Ser Arg Leu Ala	Tyr Gln Ile Ser 780 Glu	Tyr Tyr Leu 765 Phe	Arg Leu 750 Arg Cys	Tyr 735 Ala Cys Arg	720 Gln Ile Met Leu
705 Glu Leu Asn Ser Met 785	Gly Asn Glu Asp 770 Leu	Gln Leu Ile 755 Glu His	Lys Phe 740 Ser Asn	Glu 725 Ala Gly Leu His	710 Asp Arg Gln Pro Val 790	Arg Met Leu Tyr 775 Asp	Asp Cys Asp 760 Asp	Val Leu 745 Val Leu Asp	Leu 730 Asp Asp Arg	715 Ser Arg Leu Ala Gln 795	Tyr Gln Ile Ser 780 Glu	Tyr Tyr Leu 765 Phe Gln	Arg Leu 750 Arg Cys Val	Tyr 735 Ala Cys Arg	720 Gln Ile Met Leu Pro 800
705 Glu Leu Asn Ser Met 785 Val	Gly Asn Glu Asp 770 Leu Lys	Gln Leu Ile 755 Glu His	Lys Phe 740 Ser Asn	Glu 725 Ala Gly Leu His Arg 805	710 Asp Arg Gln Pro Val 790 Leu	Arg Met Leu Tyr 775 Asp	Asp Cys Asp 760 Asp Arg	Val Leu 745 Val Leu Asp	Leu 730 Asp Asp Arg Pro Ile 810	715 Ser Arg Leu Ala Gln 795 Pro	Tyr Gln Ile Ser 780 Glu Ser	Tyr Leu 765 Phe Gln Glu	Arg Leu 750 Arg Cys Val Ile	Tyr 735 Ala Cys Arg Thr	720 Gln Ile Met Leu Pro 800 Ile
705 Glu Leu Asn Ser Met 785 Val	Gly Asn Glu Asp 770 Leu Lys Asp	Gln Leu Ile 755 Glu His Tyr	Lys Phe 740 Ser Asn Met Ala Asp	Glu 725 Ala Gly Leu His Arg 805 Ser	710 Asp Arg Gln Pro Val 790 Leu Ser	Arg Met Leu Tyr 775 Asp Trp	Asp Cys Asp 760 Asp Arg Ser	Val Leu 745 Val Leu Asp Glu Ser 825	Leu 730 Asp Asp Arg Pro Ile 810 Lys	715 Ser Arg Leu Ala Gln 795 Pro	Tyr Gln Ile Ser 780 Glu Ser Glu	Tyr Leu 765 Phe Gln Glu Ile	Arg Leu 750 Arg Cys Val Ile Lys 830	Tyr 735 Ala Cys Arg Thr Ala 815 Glu	720 Gln Ile Met Leu Pro 800 Ile Arg
705 Glu Leu Asn Ser Met 785 Val Asp	Gly Asn Glu Asp 770 Leu Lys Asp Ala	Gln Leu Ile 755 Glu His Tyr Tyr Gln 835	Lys Phe 740 Ser Asn Met Ala Asp 820	Glu 725 Ala Gly Leu His Arg 805 Ser	710 Asp Arg Gln Pro Val 790 Leu Ser Glu	Arg Met Leu Tyr 775 Asp Trp Gly Phe	Asp Cys Asp 760 Asp Arg Ser Ala Val 840	Val Leu 745 Val Leu Asp Glu Ser 825 Glu	Leu 730 Asp Asp Arg Pro Ile 810 Lys	715 Ser Arg Leu Ala Gln 795 Pro Asp	Tyr Gln Ile Ser 780 Glu Ser Glu Leu	Tyr Leu 765 Phe Gln Glu Ile Arg 845	Arg Leu 750 Arg Cys Val Ile Lys 830 Asp	Tyr 735 Ala Cys Arg Thr Ala 815 Glu Val	720 Gln Ile Met Leu Pro 800 Ile Arg Val
705 Glu Leu Asn Ser Met 785 Val Asp Phe	Gly Asn Glu Asp 770 Leu Lys Asp Ala Gln 850	Gln Leu Ile 755 Glu His Tyr Tyr Gln 835 Arg	Lys Phe 740 Ser Asn Met Ala Asp 820 Thr	Glu 725 Ala Gly Leu His Arg 805 Ser Met	710 Asp Arg Gln Pro Val 790 Leu Ser Glu Phe	Arg Met Leu Tyr 775 Asp Trp Gly Phe ser 855	Asp Cys Asp 760 Asp Arg Ser Ala Val 840 Asp	Val Leu 745 Val Leu Asp Glu Ser 825 Glu Lys	Leu 730 Asp Asp Arg Pro Ile 810 Lys Glu	715 Ser Arg Leu Ala Gln 795 Pro Asp Tyr Lys	Tyr Gln Ile Ser 780 Glu Ser Glu Leu Asn 860	Tyr Leu 765 Phe Gln Glu Ile Arg 845 Lys	Arg Leu 750 Arg Cys Val Ile Lys 830 Asp Leu	Tyr 735 Ala Cys Arg Thr Ala 815 Glu Val	720 Gln Ile Met Leu Pro 800 Ile Arg Val
TOS Glu Leu Asn Ser Met 785 Val Asp Phe Cys Glu 865	Gly Asn Glu Asp 770 Leu Lys Asp Ala Gln 850 Val	Gln Leu Ile 755 Glu His Tyr Tyr Gln 835 Arg Val	Lys Phe 740 Ser Asn Met Ala Asp 820 Thr	Glu 725 Ala Gly Leu His Arg 805 Ser Met Pro	710 Asp Arg Gln Pro Val 790 Leu Ser Glu Phe Ala 870	Arg Met Leu Tyr 775 Asp Trp Gly Phe ser 855 Arg	Asp 760 Asp Arg Ser Ala Val 840 Asp	Val Leu 745 Val Leu Asp Glu Ser 825 Glu Lys Leu	Leu 730 Asp Asp Arg Pro Ile 810 Lys Glu Glu Ile	715 Ser Arg Leu Ala Gln 795 Pro Asp Tyr Lys Tyr 875	Tyr Gln Ile Ser 780 Glu Ser Glu Leu Asn 860 Phe	Tyr Leu 765 Phe Gln Glu Ile Arg 845 Lys Gly	Arg Leu 750 Arg Cys Val Ile Lys 830 Asp Leu Phe	Tyr 735 Ala Cys Arg Thr Ala 815 Glu Val Thr	720 Gln Ile Met Leu Pro 800 Ile Arg Val Phe Asn 880
TOS Glu Leu Asn Ser Met 785 Val Asp Phe Cys Glu 865 Phe	Gly Asn Glu Asp 770 Leu Lys Asp Ala Gln 850 Val Ser	Gln Leu Ile 755 Glu His Tyr Tyr Gln 835 Arg Val Asp	Lys Phe 740 Ser Asn Met Ala Asp 820 Thr Phe Asn	Glu 725 Ala Gly Leu His Arg 805 Ser Met Pro Leu Leu 885	710 Asp Arg Gln Pro Val 790 Leu Ser Glu Phe Ala 870 Arg	Arg Met Leu Tyr 775 Asp Trp Gly Phe ser 855 Arg Leu	Asp Cys Asp 760 Asp Arg Ser Ala Val 840 Asp Asn Thr	Val Leu 745 Val Leu Asp Glu Ser 825 Glu Lys Leu Lys	Leu 730 Asp Asp Arg Pro Ile 810 Lys Glu Glu Ile 11e 890	715 Ser Arg Leu Ala Gln 795 Pro Asp Tyr Lys Tyr 875 Leu	Tyr Gln Ile Ser 780 Glu Ser Glu Leu Asn 860 Phe Leu	Tyr Leu 765 Phe Gln Glu Ile Arg 845 Lys Gly Ala	Arg Leu 750 Arg Cys Val Ile Lys 830 Asp Leu Phe Ile	Tyr 735 Ala Cys Arg Thr Ala 815 Glu Val Thr Tyr	720 Gln Ile Met Leu Pro 800 Ile Arg Val Phe Asn 880 Asp
TOS Glu Leu Asn Ser Met 785 Val Asp Phe Cys Glu 865 Phe Cys	Gly Asn Glu Asp 770 Leu Lys Asp Ala Gln 850 Val Ser Val	Gln Leu Ile 755 Glu His Tyr Tyr Gln 835 Arg Val Asp	Lys Phe 740 Ser Asn Met Ala Asp 820 Thr Phe Asn Leu Val	Glu 725 Ala Gly Leu His Arg 805 Ser Met Pro Leu 885 Thr	710 Asp Arg Gln Pro Val 790 Leu Ser Glu Phe Ala 870 Arg Thr	Arg Met Leu Tyr 775 Asp Trp Gly Phe ser 855 Arg Leu Ile	Asp Cys Asp 760 Asp Arg Ser Ala Val 840 Asp Asn Thr	Val Leu 745 Val Leu Asp Glu Ser 825 Glu Lys Leu Lys Pro 905	Leu 730 Asp Asp Arg Pro Ile 810 Lys Glu Glu Ile 11e 890 Ile	715 Ser Arg Leu Ala Gln 795 Pro Asp Tyr Lys Tyr 875 Leu Ser	Tyr Gln Ile Ser 780 Glu Ser Glu Leu Asn 860 Phe Leu Lys	Tyr Leu 765 Phe Gln Glu Ile Arg 845 Lys Gly Ala Met	Arg Leu 750 Arg Cys Val Ile Lys 830 Asp Leu Phe Ile Thr 910	Tyr 735 Ala Cys Arg Thr Ala 815 Glu Val Thr Tyr Leu 895 Lys	720 Gln Ile Met Leu Pro 800 Ile Arg Val Phe Asn 880 Asp Gly

Glu Lys Glu Asp Ile Met Val Met Asp Thr Lys Leu Lys Ile Ile Glu 965 Ile Leu Gln Phe Ile Leu Asn Val Arg Leu Asp Tyr Arg Ile Ser Cys 980 Leu Leu Cys Ile Phe Lys Arg Glu Phe Asp Glu Ser Asn Ser Gln Ser 995 Ser Glu Thr Ser Ser Gly Asn Ser Ser Gln Glu Gly Pro Ser Asn Val 1010 Pro Gly Ala Leu Asp Phe Glu His Ile Glu Glu Gln Ala Glu Gly Ile 1025 Phe Gly Gly Ser Glu Glu Asn Thr Pro Leu Asp Leu Asp Asp His Gly 1045 Gly Arg Thr Phe Leu Arg Val Leu Leu His Leu Thr Met His Asp Tyr 1060 Pro Pro Leu Val Ser Gly Ala Leu Gln Leu Leu Phe Arg His Phe Ser 1075 Gln Arg Gln Glu Val Leu Gln Ala Phe Lys Gln Val Gln Asp Leu Val 1090 Thr Ser Gln Asp Val Asp Asn Tyr Lys Gln Ile Lys Gln Asp Leu Asp 1100 Thr Ser Gln Asp Val Asp Asn Tyr Lys Gln Ile Lys Gln Asp Leu Asp 1105 1110 1126 1127 1128 1129 1135 1140 1157 1120 1157 1120	
Parish P	
Ser Glu Thr Ser Ser Gly Asn Ser Ser Gln Glu Gly Pro Ser Asn Val 1010	
1010 1015 1020 Pro Gly Ala Leu Asp Phe Glu His Ile Glu Glu Glu Ala Glu Gly Ile 1025 1030 1035 104 Phe Gly Gly Ser Glu Glu Asn Thr Pro Leu Asp Leu Asp Leu Asp Asp His Gly 1055 Gly Arg Thr Phe Leu Arg Val Leu Leu His Leu Thr Met His Asp Tyr 1060 1065 1070 Pro Pro Leu Val Ser Gly Ala Leu Gln Leu Leu Phe Arg His Phe Ser 1075 1085 Gln Arg Gln Glu Val Leu Gln Ala Phe Lys Gln Val Gln Leu Leu Val 1090 Thr Ser Gln Asp Val Asp Asn Tyr Lys Gln Ile Lys Gln Asp Leu Asp 1105	
1025	
Gly Arg Thr Phe Leu Arg Val Leu His Leu Thr Met His Asp Tyr 1065 Pro Pro Leu Val Ser Gly Ala Leu Gln Leu Leu Phe Arg His Phe Ser 1075 Gln Arg Gln Glu Val Leu Gln Ala Phe Lys Gln Val Gln Leu Val 1095 Thr Ser Gln Asp Val Asp Asn Tyr Lys Gln Ile Lys Gln Asp Leu Asp 1115	
Pro Pro Leu Val Ser Gly Ala Leu Gln Leu Leu Phe Arg His Phe Ser 1075	
1075 1080 1085 1085	
1090 1095 1100 Thr Ser Gln Asp Val Asp Asn Tyr Lys Gln Ile Lys Gln Asp Leu Asp 1105 1110 1115 1120	
1105 1110 1115 112	
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Gln Leu Arg Ser Ile Val Glu Lys Ser Glu Leu Trp Val Tyr Lys Gly 1125 1130 1135	
Gln Gly Pro Asp Glu Pro Met Asp Gly Ala Ser Gly Glu Asn Glu His 1140 1145 1150	
Lys Lys Thr Glu Glu Gly Thr Ser Lys Pro Leu Lys His Glu Ser Thr 1155 1160 1165	
Ser Ser Tyr Asn Tyr Arg Val Val Lys Glu Ile Leu Ile Arg Leu Ser 1170 1175 1180	
Lys Leu Cys Val Gln Glu Ser Ala Ser Val Arg Lys Ser Arg Lys Gln 1185 1190 1195 1200	0
Gln Gln Arg Leu Leu Arg Asn Met Gly Ala His Ala Val Val Leu Glu 1205 1210 1215	
Leu Leu Gln Ile Pro Tyr Glu Lys Ala Glu Asp Thr Lys Met Gln Glu 1220 1225 1230	
Ile Met Arg Leu Ala His Glu Phe Leu Gln Asn Phe Cys Ala Gly Asn 1235 1240 1245	
Gln Gln Asn Gln Ala Leu Leu His Lys His Ile Asn Leu Phe Leu Asn 1250 1255 1260	
Pro Gly Ile Leu Glu Ala Val Thr Met Gln His Ile Phe Met Asn Asn 1265 1270 1275 128	
Phe Gln Leu Cys Ser Glu Ile Asn Glu Arg Val Val Gln His Phe Val 1285 1290 1295	
His Cys Ile Glu Thr His Gly Arg Asn Val Gln Tyr Ile Lys Phe Leu 1300 1305 1310	
Gln Thr Ile Val Lys Ala Glu Gly Lys Phe Ile Lys Lys Cys Gln Asp 1315 1320 1325	
Met Val Met Ala Glu Leu Val Asn Ser Gly Glu Asp Val Leu Val Phe 1330 1335 1340	
Tyr Asn Asp Arg Ala Ser Phe Gln Thr Leu Ile Gln Met Met Arg Ser 1345 1350 1355 136	
Glu Arg Asp Arg Met Asp Glu Asn Ser Pro Leu Phe Met Tyr His Ile 1365 1370 1375	
His Leu Val Glu Leu Leu Ala Val Cys Thr Glu Gly Lys Asn Val Tyr 1380 1385 1390	
Thr Glu Ile Lys Cys Asn Ser Leu Leu Pro Leu Asp Asp Ile Val Arg 1395 1400 1405	
Val Val Thr His Glu Asp Cys Ile Pro Glu Val Lys Ile Ala Tyr Ile 1410 1415 1420	

Asn Phe Leu Asn His Cys Tyr Val Asp Thr Glu Val Glu Met Lys Glu 1430 1435 Ile Tyr Thr Ser Asn His Met Trp Lys Leu Phe Glu Asn Phe Leu Val 1445 1450 Asp Ile Cys Arg Ala Cys Asn Asn Thr Ser Asp Arg Lys His Ala Asp 1460 1465 1470 Ser Val Leu Glu Lys Tyr Val Thr Glu Ile Val Met Ser Ile Val Thr 1475 1480 1485 Thr Phe Phe Ser Ser Pro Phe Ser Asp Gln Ser Thr Thr Leu Gln Thr 1490 1495 1500 Arg Gln Pro Val Phe Val Gln Leu Gln Gly Val Phe Arg Val Tyr 1510 1515 His Cys Asn Trp Leu Met Pro Ser Gln Lys Ala Ser Val Glu Ser Cys 1530 1535 1525 Ile Arg Val Leu Ser Asp Val Ala Lys Ser Arg Ala Ile Ala Ile Pro 1540 1545 Val Asp Leu Asp Ser Gln Val Asn Asn Leu Phe Leu Lys Ser His Asn 1555 1560 1565 Ile Val Gln Lys Thr Ala Met Asn Trp Arg Leu Ser Ala Arg Asn Ala 1570 1575 1580 Ala Arg Arg Asp Glu Val Leu Ala Ala Ser Arg Asp Tyr Arg Asn Ile 1585 1590 1595 Ile Glu Arg Leu Gln Asp Ile Val Ser Ala Leu Glu Asp Arg Leu Arg 1605 1610 1615 Pro Leu Val Gln Ala Glu Leu Ser Val Leu Val Asp Val Leu His Arg 1620 1625 1630 Pro Glu Leu Leu Phe Pro Glu Asn Thr Asp Ala Arg Arg Lys Cys Glu 1635 1640 1645 Ser Gly Gly Phe Ile Cys Lys Leu Ile Lys His Thr Lys Gln Leu Leu 1650 1655 1660 Glu Glu Asn Glu Glu Lys Leu Cys Ile Lys Val Leu Gln Thr Leu Arg 1665 1670 1675 Glu Met Met Thr Lys Asp Arg Gly Tyr Gly Glu Lys Gly Glu Ala Leu 1685 1690 1695 Arg Gln Ile Leu Val Asn Arg Tyr Tyr Gly Asn Ile Arg Pro Ser Gly 1700 1705 1710 Arg Arg Glu Asp Leu Thr Ser Phe Gly Asn Gly Pro Leu Ser Pro Gly 1715 1720 1725 Gly Pro Ser Lys Pro Gly Gly Gly Gly Gly Pro Gly Ser Gly Ser 1730 1735 1740 Thr Ser Arg Gly Glu Met Ser Leu Ala Glu Val Gln Cys His Leu Asp 1745 1750 1755 Lys Glu Gly Ala Ser Asn Leu Val Ile Asp Leu Ile Met Asn Ala Ser 1765 1770 1775 Ser Asp Arg Val Phe His Glu Ser Ile Leu Leu Ala Ile Ala Leu Leu 1780 1785 1790 Glu Gly Gly Asn Thr Thr Ile Gln His Ser Phe Phe Cys Arg Leu Thr 1795 1800 1805 Glu Asp Lys Lys Ser Glu Lys Phe Phe Lys Val Phe Tyr Asp Arg Met 1810 1815 1820 Lys Val Ala Gln Gln Glu Ile Lys Ala Thr Val Thr Val Asn Thr Ser 1830 1835 Asp Leu Gly Asn Lys Lys Asp Asp Glu Val Asp Arg Asp Ala Pro 1845 1850 1855 Ser Arg Lys Lys Ala Lys Glu Pro Thr Thr Gln Ile Thr Glu Glu Val 1860 1865 1870 Arg Asp Gln Leu Leu Glu Ala Ser Ala Ala Thr Arg Lys Ala Phe Thr 1875 1880 1885 Thr Phe Arg Arg Glu Ala Asp Pro Asp Asp His Tyr Gln Ser Gly Glu 1895

Gly Thr Gln Ala Thr Thr Asp Lys Ala Lys Asp Asp Leu Glu Met Ser 1910 1915 Ala Val Ile Thr Ile Met Gln Pro Ile Leu Arg Phe Leu Gln Leu Leu 1925 1930 Cys Glu Asn His Asn Arg Asp Leu Gln Asn Phe Leu Arg Cys Gln Asn 1940 1945 1950 Asn Lys Thr Asn Tyr Asn Leu Val Cys Glu Thr Leu Gln Phe Leu Asp 1955 1960 1965 Cys Ile Cys Gly Ser Thr Thr Gly Gly Leu Gly Leu Gly Leu Tyr 1970 1975 1980 Ile Asn Glu Lys Asn Val Ala Leu Ile Asn Gln Thr Leu Glu Ser Leu 1990 1995 Thr Glu Tyr Cys Gln Gly Pro Cys His Glu Asn Gln Asn Cys Ile Ala 2005 2010 2015 Thr His Glu Ser Asn Gly Ile Asp Ile Ile Thr Ala Leu Ile Leu Asn 2020 2025 Asp Ile Asn Pro Leu Gly Lys Lys Arg Met Asp Leu Val Leu Glu Leu 2035 2040 2045 Lys Asn Asn Ala Ser Lys Leu Leu Ala Ile Met Glu Ser Arg His 2050 2055 2060 Asp Ser Glu Asn Ala Glu Arg Ile Leu Tyr Asn Met Arg Pro Lys Glu 2070 2075 Leu Val Glu Val Ile Lys Lys Ala Tyr Met Gln Gly Glu Val Glu Phe 2085 2090 Glu Asp Gly Glu Asn Gly Glu Asp Gly Ala Ala Ser Pro Arg Asn Val 2100 2105 2110 Gly His Asn Ile Tyr Ile Leu Ala His Gln Leu Ala Arg His Asn Lys 2115 2120 2125 Glu Leu Gln Thr Met Leu Lys Pro Gly Gly Gln Val Asp Gly Asp Glu 2130 2135 2140 Ala Leu Glu Phe Tyr Ala Lys His Thr Ala Gln Ile Glu Ile Val Arg 2145 2150 2155 Leu Asp Arg Thr Met Glu Gln Ile Val Phe Pro Val Pro Ser Ile Cys 2165 2170 2175 Glu Phe Leu Thr Lys Glu Ser Lys Leu Arg Ile Tyr Tyr Thr Thr Glu 2180 2185 2190 Arg Asp Glu Gln Gly Ser Lys Ile Asn Asp Phe Phe Leu Arg Ser Glu 2195 2200 2205 Asp Leu Phe Asn Glu Met Asn Trp Gln Lys Lys Leu Arg Ala Gln Pro 2210 2215 2220 Val Leu Tyr Trp Cys Ala Arg Asn Met Ser Phe Trp Ser Ser Ile Ser 2230 2235 2240 Phe Asn Leu Ala Val Leu Met Asn Leu Leu Val Ala Phe Phe Tyr Pro 2245 2250 2255 Phe Lys Gly Val Arg Gly Gly Thr Leu Glu Pro His Trp Ser Gly Leu 2260 2265 2270 Leu Trp Thr Ala Met Leu Ile Ser Leu Ala Ile Val Ile Ala Leu Pro 2275 2280 2285 Lys Pro His Gly Ile Arg Ala Leu Ile Ala Ser Thr Ile Leu Arg Leu 2290 2295 2300 Ile Phe Ser Val Gly Leu Gln Pro Thr Leu Phe Leu Leu Gly Ala Phe 2305 2310 2315 Asn Val Cys Asn Lys Ile Ile Phe Leu Met Ser Phe Val Gly Asn Cys 2325 2330 2335 Gly Thr Phe Thr Arg Gly Tyr Arg Ala Met Val Leu Asp Val Glu Phe 2340 2345 2350 Leu Tyr His Leu Leu Tyr Leu Leu Ile Cys Ala Met Gly Leu Phe Val 2360 2365 His Glu Phe Phe Tyr Ser Leu Leu Phe Asp Leu Val Tyr Arg Glu 2375 2380

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2385
               2390
                               2395
Ile Ile Leu Thr Ala Ala Leu Ala Leu Ile Leu Val Tyr Leu Phe Ser
            2405
                            2410
Ile Val Gly Tyr Leu Phe Phe Lys Asp Phe Ile Leu Glu Val Asp
                         2425
         2420
Arg Leu Pro Asn Glu Thr Ala Gly Pro Glu Thr Gly Glu Ser Leu Ala
                     2440
Asn Asp Phe Leu Tyr Ser Asp Val Cys Arg Val Glu Thr Gly Glu Asn
          2455
                                  2460
Cys Thr Ser Pro Ala Pro Lys Glu Glu Leu Leu Pro Val Glu Glu Thr
      2470
                               2475
Glu Gln Asp Lys Glu His Thr Cys Glu Thr Leu Leu Met Cys Ile Val
                           2490
            2485
Thr Val Leu Ser His Gly Leu Arg Ser Gly Gly Val Gly Asp Val
        2500
                        2505
Leu Arg Lys Pro Ser Lys Glu Glu Pro Leu Phe Ala Ala Arg Val Ile
                                     2525
     2515
                     2520
Tyr Asp Leu Leu Phe Phe Met Val Ile Ile Val Leu Asn Leu
                                2540
 2530 2535
Ile Phe Gly Val Ile Ile Asp Thr Phe Ala Asp Leu Arg Ser Glu Lys
              2550 2555
Gln Lys Lys Glu Glu Ile Leu Lys Thr Thr Cys Phe Ile Cys Gly Leu
            2565 2570 2575
Glu Arg Asp Lys Phe Asp Asn Lys Thr Val Thr Phe Glu Glu His Ile
        2580 2585 2590
Lys Glu Glu His Asn Met Trp His Tyr Leu Cys Phe Ile Val Leu Val
     2595 2600
Lys Val Lys Asp Ser Thr Glu Tyr Thr Gly Pro Glu Ser Tyr Val Ala
                  2615
                                 2620
Glu Met Ile Arg Glu Arg Asn Leu Asp Trp Phe Pro Arg Met Arg Ala
               2630
                              2635
Met Ser Leu Val Ser Ser Asp Ser Glu Gly Glu Gln Asn Glu Leu Arg
            2645
                           2650
Asn Leu Gln Glu Lys Leu Glu Ser Thr Met Lys Leu Val Thr Asn Leu
        2660 2665
Ser Gly Gln Leu Ser Glu Leu Lys Asp Gln Met Thr Glu Gln Arg Lys
     2675 2680 2685
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<212> PRT

<213> Artificial Sequence

<220>

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 Met
 Ser
 Asp
 Lys
 Met
 Ser
 Ser
 Phe
 Leu
 His
 Ile
 Gly
 Asp
 Ile
 Cys
 Ser

 Leu
 Tyr
 Ala
 Glu
 Gly
 Ser
 Thr
 Asp
 Asp
 Heu
 Gly
 Free
 Ber
 Heu
 Heu
 Gly
 Leu
 Asp
 Leu
 Asp
 Leu
 Asp
 Asp
 Asp
 Leu
 Asp
 Asp

Pro Pro Lys Lys Phe Arq Asp Cys Leu Phe Lys Leu Cys Pro Met Asn Arg Tyr Ser Ala Gln Lys Gln Phe Trp Lys Ala Ala Lys Pro Gly Ala Asn Ser Thr Thr Asp Ala Val Leu Leu Asn Lys Leu His His Ala Ala Asp Leu Glu Lys Lys Gln Asn Glu Thr Glu Asn Arg Lys Leu Leu Gly 105 Thr Val Ile Gln Tyr Gly Asn Val Ile Gln Leu Leu His Leu Lys Ser 120 Asn Lys Tyr Leu Thr Val Asn Lys Arg Leu Pro Ala Leu Leu Glu Lys 140 135 Asn Ala Met Arg Val Thr Leu Asp Glu Ala Gly Asn Glu Gly Ser Trp 155 150 Phe Tyr Ile Gln Pro Phe Tyr Lys Leu Arg Ser Ile Gly Asp Ser Val 165 170 Val Ile Gly Asp Lys Val Val Leu Asn Pro Val Asn Ala Gly Gln Pro 180 185 Leu His Ala Ser Ser His Gln Leu Val Asp Asn Pro Gly Cys Asn Glu 200 Val Asn Ser Val Asn Cys Asn Thr Ser Trp Lys Ile Val Leu Phe Met 215 220 Lys Trp Ser Asp Asn Lys Asp Asp Ile Leu Lys Gly Asp Val Val 230 235 Arg Leu Phe His Ala Glu Gln Glu Lys Phe Leu Thr Cys Asp Glu His 250 Arg Lys Lys Gln His Val Phe Leu Arg Thr Thr Gly Arg Gln Ser Ala 265 Thr Ser Ala Thr Ser Ser Lys Ala Leu Trp Glu Val Glu Val Val Gln 280 His Asp Pro Cys Arg Gly Gly Ala Gly Tyr Trp Asn Ser Leu Phe Arg 295 300 Phe Lys His Leu Ala Thr Gly His Tyr Leu Ala Ala Glu Val Asp Pro 310 315 Asp Phe Glu Glu Glu Cys Leu Glu Phe Gln Pro Ser Val Asp Pro Asp 330 325 Gln Asp Ala Ser Arg Ser Arg Leu Arg Asn Ala Gln Glu Lys Met Val 340 345 Tyr Ser Leu Val Ser Val Pro Glu Gly Asn Asp Ile Ser Ser Ile Phe 360 365 Glu Leu Asp Pro Thr Thr Leu Arg Gly Gly Asp Ser Leu Val Pro Arg 375 380 Asn Ser Tyr Val Arg Leu Arg His Leu Cys Thr Asn Thr Trp Val His 390 395 Ser Thr Asn Ile Pro Ile Asp Lys Glu Glu Lys Pro Val Met Leu 410 Lys Ile Gly Thr Ser Pro Leu Lys Glu Asp Lys Glu Ala Phe Ala Ile 425 Val Pro Val Ser Pro Ala Glu Val Arg Asp Leu Asp Phe Ala Asn Asp 440 445 Ala Ser Lys Val Leu Gly Ser Ile Ala Gly Lys Leu Glu Lys Gly Thr 455 460 Ile Thr Gln Asn Glu Arg Arg Ser Val Thr Lys Leu Leu Glu Asp Leu 470 475 Val Tyr Phe Val Thr Gly Gly Thr Asn Ser Gly Gln Asp Val Leu Glu 485 490 Val Val Phe Ser Lys Pro Asn Arg Glu Arg Gln Lys Leu Met Arg Glu 505 Gln Asn Ile Leu Lys Gln Ile Phe Lys Leu Leu Gln Ala Pro Phe Thr 520

	WO 2	2005/0	7234′	7 	اسا ادا			IJ.							PCT/U
Asp	Cys 530	Gly	Asp	Gly	Pro	Met 535	Leu	Arg	Leu	Glu	Glu 540	Leu	Gly	Asp	Gln
Arg 545		Ala	Pro	Phe	Arg 550		Ile	Cys	Arg	Leu 555	Cys	Tyr	Arg	Val	Leu 560
Arg	His	Ser	Gln	Gln 565	Asp	Tyr	Arg	Lys	Asn 570	Gln	Glu	Tyr	Ile	Ala 575	Lys
Gln	Phe	Gly	Phe 580	Met	Gln	Lys	Gln	Ile 585	Gly	Tyr	Asp	Val	Leu 590	Ala	Glu
		595					His 600					605			
	610					615	Asp				620				
625	_				630		Asp	_		635	_		_		640
		_		645			Thr		650			_	_	655	
			660				Val	665					670		
		675					680 Val					685			
	690		_			695	Val	_			700	_	_		
705 Glu	Gly	Gln	Lys	Glu	710 Asp	Arg	Asp	Val	Leu	715 Ser	Tyr	Tyr	Arg	Tyr	720 Gln
Leu	Asn	Leu	Phe	725 Ala	Arg	Met	Cys	Leu	730 Asp	Arg	Gln	Tyr	Leu	735 Ala	Ile
Asn	Glu		740 Ser	Gly	Gln	Leu	Asp	745 Val	Asp	Leu	Ile		750 Arg	Сув	Met
Ser	Asp 770	755 Glu	Asn	Leu	Pro	Tyr 775	760 Asp	Leu	Arg	Ala	Ser 780	765 Phe	Cys	Arg	Leu
Met 785		His	Met	His	Val 790		Arg	Asp	Pro	Gln 795		Gln	Val	Thr	Pro 800
	Lys	Tyr	Ala	Arg 805		Trp	Ser	Glu	Ile 810		Ser	Glu	Ile	Ala 815	
			820					825					830		Arg
		835					840					845			Val
•	850	_				855	_	-		•	860	-			Phe
865					870					875					Asn 880
				885					890					895	Asp
=			900					905					910	_	Gly
		915	-	_			920					925			Met
	930					935					940				Pro
945					950		Met			955					960
	_		-	965					970	-				975	Cys
Leu	Leu	_	980 Ile	Phe	Lys	Arg			Asp	Glu	Ser			Gln	Ser
		995					1000	J				1009	>		

1010	Ser Gly Asn 1015		n Glu Gly 1020	Pro Ser Asn Val
Pro Gly Ala Leu A	sp Phe Glu	His Ile Gl	u Glu Gln	Ala Glu Gly Ile
1025	1030		1035	1040
Phe Gly Gly Ser G	lu Glu Asn .045		u Asp Leu 50	Asp Asp His Gly 1055
Gly Arg Thr Phe L				
1060		1065		1070
Pro Pro Leu Val S	Ser Gly Ala		u Leu Phe	Arg His Phe Ser 1085
Gln Arg Gln Glu V 1090	al Leu Gln 1095	Ala Phe Ly	s Gln Val 1100	Gln Leu Leu Val
Thr Ser Gln Asp V	_	Tyr Lys Gl		Gln Asp Leu Asp 1120
1105 Gln Leu Arg Ser I	1110	Lve Ser Gl	1115	
	.125		30	1135
Gln Gly Pro Asp G 1140				Glu Asn Glu His 1150
Lys Lys Thr Glu G	Slu Gly Thr	Ser Lys Pr	o Leu Lys	His Glu Ser Thr
1155 Ser Ser Tyr Asn T	wr Ara Wal	1160	n Tle Len	1165
1170	1175	5	1180)
Lys Leu Cys Val G		Ala Ser Va		_
1185 Gln Gln Arg Leu L	1190	Met Cly Al	1195 a Hig Ala	Val Val Leu Glu
_	.205	_	10	1215
Leu Leu Gln Ile P				
1220	-	1225	-	1230
Ile Met Arg Leu A 1235	ala His Glu	Phe Leu Gl	n Asn Phe	Cys Ala Gly Asn 1245
Gln Gln Asn Gln A	ala Leu Leu 1255	-	s Ile Asn 1260	
Pro Gly Ile Leu G				
-			1275	
1265	1270			1280
Phe Gln Leu Cys S				
Phe Gln Leu Cys S	Ser Glu Ile .285	12	g Val Val 90	Gln His Phe Val 1295
Phe Gln Leu Cys S His Cys Ile Glu T 1300	Ser Glu Ile .285 Thr His Gly	Arg Asn Va 1305	g Val Val 90 l Gln Tyr	Gln His Phe Val 1295 Ile Lys Phe Leu 1310
Phe Gln Leu Cys S His Cys Ile Glu T 1300 Gln Thr Ile Val L 1315	Ser Glu Ile .285 Thr His Gly Lys Ala Glu	Arg Asn Va 1305 Gly Lys Ph 1320	g Val Val 90 1 Gln Tyr e Ile Lys	Gln His Phe Val 1295 Ile Lys Phe Leu 1310 Lys Cys Gln Asp 1325
Phe Gln Leu Cys S His Cys Ile Glu T 1300 Gln Thr Ile Val L 1315 Met Val Met Ala G	Ser Glu Ile .285 Thr His Gly Lys Ala Glu	Arg Asn Va 1305 Gly Lys Ph 1320 Asn Ser Gl	g Val Val 90 1 Gln Tyr e Ile Lys y Glu Asp	Gln His Phe Val 1295 Ile Lys Phe Leu 1310 Lys Cys Gln Asp 1325 Val Leu Val Phe
Phe Gln Leu Cys S His Cys Ile Glu T 1300 Gln Thr Ile Val L 1315 Met Val Met Ala G 1330	Ser Glu Ile .285 Chr His Gly Lys Ala Glu Glu Leu Val 1335	12 Arg Asn Va 1305 Gly Lys Ph 1320 Asn Ser Gl	g Val Val 90 1 Gln Tyr e Ile Lys y Glu Asp 1340	Gln His Phe Val 1295 Ile Lys Phe Leu 1310 Lys Cys Gln Asp 1325 Val Leu Val Phe
Phe Gln Leu Cys S His Cys Ile Glu T 1300 Gln Thr Ile Val L 1315 Met Val Met Ala G 1330 Tyr Asn Asp Arg A	Ser Glu Ile .285 Chr His Gly Lys Ala Glu Glu Leu Val .1339 Ala Ser Phe	12 Arg Asn Va 1305 Gly Lys Ph 1320 Asn Ser Gl	g Val Val 90 1 Gln Tyr e Ile Lys y Glu Asp 1340 u Ile Gln	Gln His Phe Val 1295 Ile Lys Phe Leu 1310 Lys Cys Gln Asp 1325 Val Leu Val Phe Met Met Arg Ser
Phe Gln Leu Cys S His Cys Ile Glu T 1300 Gln Thr Ile Val L 1315 Met Val Met Ala G 1330 Tyr Asn Asp Arg A 1345	Ser Glu Ile .285 Chr His Gly Lys Ala Glu Glu Leu Val .1339 Ala Ser Phe .1350	Arg Asn Va 1305 Gly Lys Ph 1320 Asn Ser Gl Gln Thr Le	g Val Val 90 l Gln Tyr e Ile Lys y Glu Asp 1340 u Ile Gln 1355	Gln His Phe Val 1295 Ile Lys Phe Leu 1310 Lys Cys Gln Asp 1325 Val Leu Val Phe O Met Met Arg Ser 1360
Phe Gln Leu Cys S His Cys Ile Glu T 1300 Gln Thr Ile Val L 1315 Met Val Met Ala G 1330 Tyr Asn Asp Arg A 1345 Glu Arg Asp Arg M	Ser Glu Ile .285 Chr His Gly Lys Ala Glu Glu Leu Val .1339 Ala Ser Phe .1350	Arg Asn Va 1305 Gly Lys Ph 1320 Asn Ser Gl 5 Gln Thr Le	g Val Val 90 l Gln Tyr e Ile Lys y Glu Asp 1340 u Ile Gln 1355	Gln His Phe Val 1295 Ile Lys Phe Leu 1310 Lys Cys Gln Asp 1325 Val Leu Val Phe O Met Met Arg Ser 1360
Phe Gln Leu Cys S His Cys Ile Glu T 1300 Gln Thr Ile Val L 1315 Met Val Met Ala G 1330 Tyr Asn Asp Arg A 1345 Glu Arg Asp Arg M	Ser Glu Ile .285 Thr His Gly Lys Ala Glu .335 Ala Ser Phe .1350 Met Asp Glu	Arg Asn Va 1305 Gly Lys Ph 1320 Asn Ser Gl Gln Thr Le Asn Ser Pr	g Val Val 90 l Gln Tyr e Ile Lys y Glu Asp 1340 u Ile Gln 1355 o Leu Phe 70	Gln His Phe Val 1295 Ile Lys Phe Leu 1310 Lys Cys Gln Asp 1325 Val Leu Val Phe Met Met Arg Ser 1360 Met Tyr His Ile 1375
Phe Gln Leu Cys S His Cys Ile Glu T 1300 Gln Thr Ile Val L 1315 Met Val Met Ala G 1330 Tyr Asn Asp Arg A 1345 Glu Arg Asp Arg M His Leu Val Glu L 1380	Ser Glu Ile 285 Chr His Gly Lys Ala Glu Glu Leu Val 1339 Ala Ser Phe 1350 Met Asp Glu 1365 Leu Leu Ala	Arg Asn Va 1305 Gly Lys Ph 1320 Asn Ser Gl 5 Gln Thr Le Asn Ser Pr 13 Val Cys Th 1385	g Val Val 90 l Gln Tyr e Ile Lys y Glu Asp 1340 u Ile Gln 1355 o Leu Phe 70 r Glu Gly	Gln His Phe Val 1295 Ile Lys Phe Leu 1310 Lys Cys Gln Asp 1325 Val Leu Val Phe Met Met Arg Ser 1360 Met Tyr His Ile 1375 Lys Asn Val Tyr 1390
Phe Gln Leu Cys S His Cys Ile Glu T 1300 Gln Thr Ile Val L 1315 Met Val Met Ala G 1330 Tyr Asn Asp Arg A 1345 Glu Arg Asp Arg M His Leu Val Glu L	Ser Glu Ile 285 Chr His Gly Lys Ala Glu Glu Leu Val 1339 Ala Ser Phe 1350 Met Asp Glu 1365 Leu Leu Ala	Arg Asn Va 1305 Gly Lys Ph 1320 Asn Ser Gl 5 Gln Thr Le Asn Ser Pr 13 Val Cys Th 1385	g Val Val 90 l Gln Tyr e Ile Lys y Glu Asp 1340 u Ile Gln 1355 o Leu Phe 70 r Glu Gly	Gln His Phe Val 1295 Ile Lys Phe Leu 1310 Lys Cys Gln Asp 1325 Val Leu Val Phe Met Met Arg Ser 1360 Met Tyr His Ile 1375 Lys Asn Val Tyr 1390
Phe Gln Leu Cys S 11 His Cys Ile Glu T 1300 Gln Thr Ile Val L 1315 Met Val Met Ala G 1330 Tyr Asn Asp Arg A 1345 Glu Arg Asp Arg M His Leu Val Glu L 1380 Thr Glu Ile Lys C 1395	Ser Glu Ile 285 Chr His Gly Lys Ala Glu Glu Leu Val 1335 Ala Ser Phe 1350 Met Asp Glu 365 Leu Leu Ala Cys Asn Ser	12 Arg Asn Va 1305 Gly Lys Ph 1320 Asn Ser Gl Gln Thr Le Asn Ser Pr 13 Val Cys Th 1385 Leu Leu Pr 1400 Ile Pro Gl	g Val Val 90 1 Gln Tyr e Ile Lys y Glu Asp 1340 u Ile Gln 1355 o Leu Phe 70 r Glu Gly o Leu Asp u Val Lys	Gln His Phe Val 1295 Ile Lys Phe Leu 1310 Lys Cys Gln Asp 1325 Val Leu Val Phe Met Met Arg Ser 1360 Met Tyr His Ile 1375 Lys Asn Val Tyr 1390 Asp Ile Val Arg 1405 Ile Ala Tyr Ile
Phe Gln Leu Cys S 11 His Cys Ile Glu T 1300 Gln Thr Ile Val L 1315 Met Val Met Ala G 1330 Tyr Asn Asp Arg A 1345 Glu Arg Asp Arg M His Leu Val Glu L 1380 Thr Glu Ile Lys G 1395 Val Val Thr His G	Ser Glu Ile 285 Chr His Gly Lys Ala Glu 313 Ala Ser Phe 1350 Met Asp Glu 365 Leu Leu Ala Cys Asn Ser 3418	Arg Asn Va 1305 Gly Lys Ph 1320 Asn Ser Gl 5 Gln Thr Le Asn Ser Pr 13 Val Cys Th 1385 Leu Leu Pr 1400 Ile Pro Gl	g Val Val 90 1 Gln Tyr e Ile Lys y Glu Asp 1340 u Ile Gln 1355 o Leu Phe 70 r Glu Gly o Leu Asp u Val Lys 1420	Gln His Phe Val 1295 Ile Lys Phe Leu 1310 Lys Cys Gln Asp 1325 Val Leu Val Phe Met Met Arg Ser 1360 Met Tyr His Ile 1375 Lys Asn Val Tyr 1390 Asp Ile Val Arg 1405 Ile Ala Tyr Ile
Phe Gln Leu Cys S 11 His Cys Ile Glu T 1300 Gln Thr Ile Val L 1315 Met Val Met Ala G 1330 Tyr Asn Asp Arg A 1345 Glu Arg Asp Arg M His Leu Val Glu L 1380 Thr Glu Ile Lys C 1395	Ser Glu Ile 285 Chr His Gly Lys Ala Glu 313 Ala Ser Phe 1350 Met Asp Glu 365 Leu Leu Ala Cys Asn Ser 3418	Arg Asn Va 1305 Gly Lys Ph 1320 Asn Ser Gl 5 Gln Thr Le Asn Ser Pr 13 Val Cys Th 1385 Leu Leu Pr 1400 Ile Pro Gl	g Val Val 90 1 Gln Tyr e Ile Lys y Glu Asp 1340 u Ile Gln 1355 o Leu Phe 70 r Glu Gly o Leu Asp u Val Lys 1420	Gln His Phe Val 1295 Ile Lys Phe Leu 1310 Lys Cys Gln Asp 1325 Val Leu Val Phe Met Met Arg Ser 1360 Met Tyr His Ile 1375 Lys Asn Val Tyr 1390 Asp Ile Val Arg 1405 Ile Ala Tyr Ile
Phe Gln Leu Cys S 1 His Cys Ile Glu T 1300 Gln Thr Ile Val L 1315 Met Val Met Ala G 1330 Tyr Asn Asp Arg A 1345 Glu Arg Asp Arg M His Leu Val Glu L 1380 Thr Glu Ile Lys C 1395 Val Val Thr His G 1410 Asn Phe Leu Asn H	Ser Glu Ile 285 Chr His Gly Lys Ala Glu 3135 Ala Ser Phe 1350 Met Asp Glu 365 Leu Leu Ala Cys Asn Ser 3419 His Cys Tyr 1430	Arg Asn Va 1305 Gly Lys Ph 1320 Asn Ser Gl 5 Gln Thr Le Asn Ser Pr 1385 Val Cys Th 1385 Leu Leu Pr 1400 Ile Pro Gl 5	g Val Val 90 1 Gln Tyr e Ile Lys y Glu Asp 1340 u Ile Gln 1355 o Leu Phe 70 r Glu Gly o Leu Asp u Val Lys 1420 r Glu Val 1435	Gln His Phe Val 1295 Ile Lys Phe Leu 1310 Lys Cys Gln Asp 1325 Val Leu Val Phe Met Met Arg Ser 1360 Met Tyr His Ile 1375 Lys Asn Val Tyr 1390 Asp Ile Val Arg 1405 Ile Ala Tyr Ile Clu Met Lys Glu 1440
Phe Gln Leu Cys S 1 His Cys Ile Glu T 1300 Gln Thr Ile Val L 1315 Met Val Met Ala G 1330 Tyr Asn Asp Arg A 1345 Glu Arg Asp Arg M His Leu Val Glu L 1380 Thr Glu Ile Lys C 1395 Val Val Thr His G 1410 Asn Phe Leu Asn H 1425 Ile Tyr Thr Ser A	Ger Glu Ile 285 Chr His Gly Lys Ala Glu Glu Leu Val 1335 Ala Ser Phe 1350 Met Asp Glu 365 Leu Leu Ala Cys Asn Ser 1419 His Cys Tyr 1430 Asn His Met	Arg Asn Va 1305 Gly Lys Ph 1320 Asn Ser Gl 5 Gln Thr Le Asn Ser Pr 1385 Val Cys Th 1385 Leu Leu Pr 1400 Ile Pro Gl 5 Val Asp Th	g Val Val 90 1 Gln Tyr e Ile Lys y Glu Asp 1340 u Ile Gln 1355 to Leu Phe 70 r Glu Gly to Leu Asp u Val Lys 1420 r Glu Val 1435 u Phe Glu 50	Gln His Phe Val 1295 Ile Lys Phe Leu 1310 Lys Cys Gln Asp 1325 Val Leu Val Phe Met Met Arg Ser 1360 Met Tyr His Ile 1375 Lys Asn Val Tyr 1390 Asp Ile Val Arg 1405 Ile Ala Tyr Ile Colu Met Lys Glu 1440 Asn Phe Leu Val 1455
Phe Gln Leu Cys S 1 His Cys Ile Glu T 1300 Gln Thr Ile Val L 1315 Met Val Met Ala G 1330 Tyr Asn Asp Arg A 1345 Glu Arg Asp Arg M His Leu Val Glu L 1380 Thr Glu Ile Lys C 1395 Val Val Thr His G 1410 Asn Phe Leu Asn H 1425 Ile Tyr Thr Ser A Asp Ile Cys Arg A	Ger Glu Ile 285 Chr His Gly Lys Ala Glu Glu Leu Val 1335 Ala Ser Phe 1350 Met Asp Glu 365 Leu Leu Ala Cys Asn Ser 1419 His Cys Tyr 1430 Asn His Met	Arg Asn Va 1305 Gly Lys Ph 1320 Asn Ser Gl Gln Thr Le Asn Ser Pr 1385 Val Cys Th 1385 Leu Leu Pr 1400 Ile Pro Gl 5 Val Asp Th Trp Lys Le 14	g Val Val 90 1 Gln Tyr e Ile Lys y Glu Asp 1340 u Ile Gln 1355 to Leu Phe 70 r Glu Gly to Leu Asp u Val Lys 1420 r Glu Val 1435 u Phe Glu 50	Gln His Phe Val
Phe Gln Leu Cys S 1 His Cys Ile Glu T 1300 Gln Thr Ile Val L 1315 Met Val Met Ala G 1330 Tyr Asn Asp Arg A 1345 Glu Arg Asp Arg M His Leu Val Glu L 1380 Thr Glu Ile Lys C 1395 Val Val Thr His G 1410 Asn Phe Leu Asn H 1425 Ile Tyr Thr Ser A	Ser Glu Ile 285 Chr His Gly Lys Ala Glu 31335 Ala Ser Phe 1350 Met Asp Glu 365 Leu Leu Ala Cys Asn Ser 1419 His Cys Tyr 1430 Asn His Met 1445 Ala Cys Asn	Arg Asn Va 1305 Gly Lys Ph 1320 Asn Ser Gl Gln Thr Le Asn Ser Pr 1385 Val Cys Th 1385 Leu Leu Pr 1400 Ile Pro Gl 5 Val Asp Th Trp Lys Le 1465	g Val Val 90 1 Gln Tyr e Ile Lys y Glu Asp 1340 u Ile Gln 1355 to Leu Phe 70 r Glu Gly to Leu Asp u Val Lys 1420 r Glu Val 1435 u Phe Glu 50 r Asp Arg	Gln His Phe Val 1295 Ile Lys Phe Leu 1310 Lys Cys Gln Asp 1325 Val Leu Val Phe Met Met Arg Ser 1360 Met Tyr His Ile 1375 Lys Asn Val Tyr 1390 Asp Ile Val Arg 1405 Ile Ala Tyr Ile O Glu Met Lys Glu 1440 Asn Phe Leu Val 1455 Lys His Ala Asp 1470

Thr Phe Phe Ser Ser Pro Phe Ser Asp Gln Ser Thr Thr Leu Gln Thr 1495 1500 Arg Gln Pro Val Phe Val Gln Leu Leu Gln Gly Val Phe Arg Val Tyr 1515 1510 His Cys Asn Trp Leu Met Pro Ser Gln Lys Ala Ser Val Glu Ser Cys 1525 1530 Ile Arg Val Leu Ser Asp Val Ala Lys Ser Arg Ala Ile Ala Ile Pro 1540 1545 1550 Val Asp Leu Asp Ser Gln Val Asn Asn Leu Phe Leu Lys Ser His Asn 1555 1560 1565 Ile Val Gln Lys Thr Ala Met Asn Trp Arg Leu Ser Ala Arg Asn Ala 1570 1575 1580 Ala Arg Arg Asp Glu Val Leu Ala Ala Ser Arg Asp Tyr Arg Asn Ile 1590 1595 1600 Ile Glu Arg Leu Gln Asp Ile Val Ser Ala Leu Glu Asp Arg Leu Arg 1605 1610 1615 Pro Leu Val Gln Ala Glu Leu Ser Val Leu Val Asp Val Leu His Arg 1620 1625 1630 Pro Glu Leu Leu Phe Pro Glu Asn Thr Asp Ala Arg Arg Lys Cys Glu 1640 1645 Ser Gly Gly Phe Ile Cys Lys Leu Ile Lys His Thr Lys Gln Leu Leu 1655 1660 Glu Glu Asn Glu Glu Lys Leu Cys Ile Lys Val Leu Gln Thr Leu Arg 1670 1⁶⁷⁵ Glu Met Met Thr Lys Asp Arg Gly Tyr Gly Glu Lys Gln Ile Ser Ile 1685 1690 Asp Glu Leu Glu Asn Ala Glu Leu Pro Gln Pro Pro Glu Ala Glu Asn 1700 1705 Ser Thr Glu Glu Leu Glu Pro Ser Pro Pro Leu Arg Gln Leu Glu Asp 1715 1720 1725 His Lys Arg Gly Glu Ala Leu Arg Gln Ile Leu Val Asn Arg Tyr Tyr 1730 1735 1740 Gly Asn Ile Arg Pro Ser Gly Arg Arg Glu Asp Leu Thr Ser Phe Gly 1750 1755 Asn Gly Pro Leu Ser Pro Gly Gly Pro Ser Lys Pro Gly Gly Gly 1765 1770 Gly Gly Pro Gly Ser Gly Ser Thr Ser Arg Gly Glu Met Ser Leu Ala 1780 1785 1790 Glu Val Gln Cys His Leu Asp Lys Glu Gly Ala Ser Asn Leu Val Ile 1795 1800 1805 Asp Leu Ile Met Asn Ala Ser Ser Asp Arg Val Phe His Glu Ser Ile 1810 1815 1820 Leu Leu Ala Ile Ala Leu Leu Glu Gly Gly Asn Thr Thr Ile Gln His 1830 1835 Ser Phe Phe Cys Arg Leu Thr Glu Asp Lys Lys Ser Glu Lys Phe Phe 1845 1850 Lys Val Phe Tyr Asp Arg Met Lys Val Ala Gln Glu Ile Lys Ala 1860 1865 Thr Val Thr Val Asn Thr Ser Asp Leu Gly Asn Lys Lys Asp Asp 1875 1880 1885 Glu Val Asp Arg Asp Ala Pro Ser Arg Lys Lys Ala Lys Glu Pro Thr 1890 1895 1900 Thr Gln Ile Thr Glu Glu Val Arg Asp Gln Leu Leu Glu Ala Ser Ala 1910 1915 Ala Thr Arg Lys Ala Phe Thr Thr Phe Arg Arg Glu Ala Asp Pro Asp 1925 -1930 1935 Asp His Tyr Gln Ser Gly Glu Gly Thr Gln Ala Thr Thr Asp Lys Ala 1940 1945 1950 Lys Asp Asp Leu Glu Met Ser Ala Val Ile Thr Ile Met Gln Pro Ile 1960

Leu Arg Phe Leu Gln Leu Cys Glu Asn His Asn Arg Asp Leu Gln 1975 1980 Asn Phe Leu Arg Cys Gln Asn Asn Lys Thr Asn Tyr Asn Leu Val Cys 1990 1995 Glu Thr Leu Gln Phe Leu Asp Cys Ile Cys Gly Ser Thr Thr Gly Gly 2005 2010 Leu Gly Leu Leu Gly Leu Tyr Ile Asn Glu Lys Asn Val Ala Leu Ile 2020 2025 2030 Asn Gln Thr Leu Glu Ser Leu Thr Glu Tyr Cys Gln Gly Pro Cys His 2035 2040 2045 Glu Asn Gln Asn Cys Ile Ala Thr His Glu Ser Asn Gly Ile Asp Ile 2050 2055 2060 Ile Thr Ala Leu Ile Leu Asn Asp Ile Asn Pro Leu Gly Lys Lys Arg 2070 2075 2080 Met Asp Leu Val Leu Glu Leu Lys Asn Asn Ala Ser Lys Leu Leu 2085 2090 2095 Ala Ile Met Glu Ser Arg His Asp Ser Glu Asn Ala Glu Arg Ile Leu 2100 2105 Tyr Asn Met Arg Pro Lys Glu Leu Val Glu Val Ile Lys Lys Ala Tyr 2115 2120 2125 Met Gln Gly Glu Val Glu Phe Glu Asp Gly Glu Asn Gly Glu Asp Gly 2135 Ala Ala Ser Pro Arg Asn Val Gly His Asn Ile Tyr Ile Leu Ala His 2150 2155 Gln Leu Ala Arg His Asn Lys Glu Leu Gln Thr Met Leu Lys Pro Gly 2165 2170 2175 Gly Gln Val Asp Gly Asp Glu Ala Leu Glu Phe Tyr Ala Lys His Thr 2180 2185 2190 Ala Gln Ile Glu Ile Val Arg Leu Asp Arg Thr Met Glu Gln Ile Val 2195 2200 2205 Phe Pro Val Pro Ser Ile Cys Glu Phe Leu Thr Lys Glu Ser Lys Leu 2210 2215 2220 Arg Ile Tyr Tyr Thr Thr Glu Arg Asp Glu Gln Gly Ser Lys Ile Asn 2225 2230 2235 2240 Asp Phe Phe Leu Arg Ser Glu Asp Leu Phe Asn Glu Met Asn Trp Gln 2245 2250 2255 Lys Lys Leu Arg Ala Gln Pro Val Leu Tyr Trp Cys Ala Arg Asn Met 2260 2265 2270 Ser Phe Trp Ser Ser Ile Ser Phe Asn Leu Ala Val Leu Met Asn Leu 2275 2280 2285 Leu Val Ala Phe Phe Tyr Pro Phe Lys Gly Val Arg Gly Gly Thr Leu 2295 2300 Glu Pro His Trp Ser Gly Leu Leu Trp Thr Ala Met Leu Ile Ser Leu 2310 2315 Ala Ile Val Ile Ala Leu Pro Lys Pro His Gly Ile Arg Ala Leu Ile 2325 2330 2335 Ala Ser Thr Ile Leu Arg Leu Ile Phe Ser Val Gly Leu Gln Pro Thr 2340 2345 2350 Leu Phe Leu Gly Ala Phe Asn Val Cys Asn Lys Ile Ile Phe Leu 2355 2360 2365 Met Ser Phe Val Gly Asn Cys Gly Thr Phe Thr Arg Gly Tyr Arg Ala 2370 2375 2380 Met Val Leu Asp Val Glu Phe Leu Tyr His Leu Leu Tyr Leu Leu Ile 2385 2390 2395 Cys Ala Met Gly Leu Phe Val His Glu Phe Phe Tyr Ser Leu Leu 2405 2410 2415 Phe Asp Leu Val Tyr Arg Glu Glu Thr Leu Leu Asn Val Ile Lys Ser 2420 2425 Val Thr Arg Asn Gly Arg Pro Ile Ile Leu Thr Ala Ala Leu Ala Leu 2440

Ile Leu Val Tyr Leu Phe Ser Ile Val Gly Tyr Leu Phe Phe Lys Asp 2460 2455 Asp Phe Ile Leu Glu Val Asp Arg Leu Pro Asn Glu Thr Ala Gly Pro 2470 2475 Glu Thr Gly Glu Ser Leu Ala Asn Asp Phe Leu Tyr Ser Asp Val Cys 2490 Arg Val Glu Thr Gly Glu Asn Cys Thr Ser Pro Ala Pro Lys Glu Glu 2505 2510 Leu Leu Pro Val Glu Glu Thr Glu Gln Asp Lys Glu His Thr Cys Glu 2520 Thr Leu Leu Met Cys Ile Val Thr Val Leu Ser His Gly Leu Arg Ser 2535 2540 Gly Gly Val Gly Asp Val Leu Arg Lys Pro Ser Lys Glu Glu Pro 2550 2555 Leu Phe Ala Ala Arg Val Ile Tyr Asp Leu Leu Phe Phe Met Val 2570 2575 2565 Ile Ile Ile Val Leu Asn Leu Ile Phe Gly Val Ile Ile Asp Thr Phe 2585 Ala Asp Leu Arg Ser Glu Lys Gln Lys Lys Glu Glu Ile Leu Lys Thr 2595 2600 2605 Thr Cys Phe Ile Cys Gly Leu Glu Arg Asp Lys Phe Asp Asn Lys Thr 2615 2620 Val Thr Phe Glu Glu His Ile Lys Glu Glu His Asn Met Trp His Tyr 2630 2635 Leu Cys Phe Ile Val Leu Val Lys Val Lys Asp Ser Thr Glu Tyr Thr 2645 2650 2655 Gly Pro Glu Ser Tyr Val Ala Glu Met Ile Arg Glu Arg Asn Leu Asp 2665 2670 Trp Phe Pro Arg Met Arg Ala Met Ser Leu Val Ser Ser Asp Ser Glu 2675 2680 Gly Glu Gln Asn Glu Leu Arg Asn Leu Gln Glu Lys Leu Glu Ser Thr 2690 2695 2700 Met Lys Leu Val Thr Asn Leu Ser Gly Gln Leu Ser Glu Leu Lys Asp 2710 2715 2720 Gln Met Thr Glu Gln Arg Lys Gln Lys Gln Arg Ile Gly Leu Leu Gly 2725 2730 His Pro Pro His Met Asn Val Asn Pro Gln Gln Pro Ala 2740 2745

<210> 17

<211> 2710

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:/note =
 synthetic construct

-100- 17

 Met
 Ser
 Asp
 Lys
 Met
 Ser
 Ser
 Phe
 Leu
 His
 Ile
 Gly
 Asp
 Ile
 Cys
 Ser

 Leu
 Tyr
 Ala
 Glu
 Gly
 Ser
 Thr
 Asn
 Gly
 Phe
 Ile
 Ser
 Thr
 Leu
 Gly
 Leu

 Val
 Asp
 Asp
 Cys
 Val
 Val
 Gln
 Pro
 Glu
 Ala
 Gly
 Asp
 Leu
 Asn
 Asn

 Asp
 Pro
 Lys
 Pro
 Asp
 Cys
 Leu
 Phe
 Lys
 Leu
 Cys
 Pro
 Met
 Asn

 Arg
 Tyr
 Ser
 Ala
 Gln
 Lys
 Gln
 Phe
 Trp
 Lys
 Ala
 Ala
 Lys
 Pro
 Gly
 Ala

 Arg
 Tyr
 Ser
 Ala
 Gln
 Lys
 Fro
 Tyr
 Eu
 Ala
 Ala
 Ala
 Lys
 Pro
 Gly
 Ala

 Arg
 Tyr
 Ser
 Ala
 Gly
 Fro
 Tyr
 Fr

Asn	Ser	Thr	Thr	Asp 85	Ala	Val	Leu	Leu	Asn 90	Lys	Leu	His	His	Ala 95	Ala
Asp	Leu	Glu	Lys 100	Lys	Gln	Asn	Glu	Thr 105	Glu	Asn	Arg	Lys	Leu 110	Leu	Gly
Thr	Val	Ile 115	Gln	Tyr	Gly	Asn	Val 120	Ile	Gln	Leu	Leu	His 125	Leu	Lys	Ser
Asn	Lys 130	Tyr	Leu	Thr	Val	Asn 135	Lys	Arg	Leu	Pro	Ala 140	Leu	Leu	Glu	Lys
Asn 145	Ala	Met	Arg	Val	Thr 150	Leu	Asp	Glu	Ala	Gly 155	Asn	Glu	Gly	Ser	Trp 160
Phe	Tyr	Ile	Gln	Pro 165	Phe	Tyr	Lys	Leu	Arg 170	Ser	Ile	Gly	Asp	Ser 175	Val
Val	Ile	Gly	Asp 180	Lys	Val	Val	Leu	Asn 185	Pro	Val	Asn	Ala	Gly 190	Gln	Pro
Leu	His	Ala 195	Ser	Ser	His	Gln	Leu 200	Val	Asp	Asn	Pro	Gly 205	Сув	Asn	Glu
	210				Cys	215				-	220				
Lys 225	Trp	Ser	Asp	Asn	Lys 230	Asp	Asp	Ile	Leu	Lys 235	Gly	Gly	Asp	Val	Val 240
Arg	Leu	Phe	His	Ala 245	Glu	Gln	Glu	Lys	Phe 250	Leu	Thr	Cys	Asp	Glu 255	His
Arg	Lys	Lys	Gln 260	His	Val	Phe	Leu	Arg 265	Thr	Thr	Gly	Arg	Gln 270	Ser	Ala
Thr	Ser	Ala 275	Thr	Ser	Ser	Lys	Ala 280	Leu	Trp	Glu	Val	Glu 285	Val	Val	Gln
His	Asp 290	Pro	Cys	Arg	Gly	Gly 295	Ala	Gly	Tyr	Trp	Asn 300	Ser	Leu	Phe	Arg
Phe 305	Lys	His	Leu	Ala	Thr 310	Gly	His	Tyr	Leu	Ala 315	Ala	Glu	Val	Asp	Pro 320
Asp	Phe	Glu	Glu	Glu 325	Cys	Leu	Glu	Phe	Gln 330	Pro	Ser	Val	Asp	Pro 335	Asp
Gln	Asp	Ala	Ser 340	Arg	Ser	Arg	Leu	Arg 345	Asn	Ala	Gln	Glu	Lys 350	Met	Val
		355			Val		360					365			
Glu	Leu 370	Asp	Pro	Thr	Thr	Leu 375	Arg	Gly	Gly	Asp	Ser 380	Leu	Val	Pro	Arg
385					Leu 390				_	395					400
				405	Ile	-			410					415	
			420					425					430		Ile
		435					440					445			Asp
	450					455					460				Thr
465					470					475					Leu 480
Val	Tyr	Phe	Val	Thr 485	Gly	Gly	Thr	Asn	Ser 490	Gly	Gln	Asp	Val	Leu 495	Glu
Val	Val	Phe	Ser 500	Lys	Pro	Asn	Arg	Glu 505	Arg	Gln	Lys	Leu	Met 510	Arg	Glu
Gln	Asn	Ile 515	Leu	Lys	Gln	Ile	Phe 520	Lys	Leu	Leu	Gln	Ala 525	Pro	Phe	Thr
	530	_	-			535					540				Gln
Arg 545	His	Ala	Pro	Phe	Arg 550	His	Ile	Cys	Arg	Leu 555	Cys	Tyr	Arg	Val	Leu 560

Arg His Ser Gln Gln Asp Tyr Arg Lys Asn Gln Glu Tyr Ile Ala Lys Gln Phe Gly Phe Met Gln Lys Gln Ile Gly Tyr Asp Val Leu Ala Glu Asp Thr Ile Thr Ala Leu Leu His Asn Asn Arg Lys Leu Leu Glu Lys His Ile Thr Ala Ala Glu Ile Asp Thr Phe Val Ser Leu Val Arg Lys Asn Arg Glu Pro Arg Phe Leu Asp Tyr Leu Ser Asp Leu Cys Val Ser Met Asn Lys Ser Ile Pro Val Thr Gln Glu Leu Ile Cys Lys Ala Val Leu Asn Pro Thr Asn Ala Asp Ile Leu Ile Glu Thr Lys Leu Val Leu Ser Arg Phe Glu Phe Glu Gly Val Ser Thr Gly Glu Asn Ala Leu Glu Ala Gly Glu Asp Glu Glu Glu Val Trp Leu Phe Trp Arg Asp Ser Asn Lys Glu Ile Arg Ser Lys Ser Val Arg Glu Leu Ala Gln Asp Ala Lys Glu Gly Gln Lys Glu Asp Arg Asp Val Leu Ser Tyr Tyr Arg Tyr Gln Leu Asn Leu Phe Ala Arg Met Cys Leu Asp Arg Gln Tyr Leu Ala Ile Asn Glu Ile Ser Gly Gln Leu Asp Val Asp Leu Ile Leu Arg Cys Met Ser Asp Glu Asn Leu Pro Tyr Asp Leu Arg Ala Ser Phe Cys Arg Leu Met Leu His Met His Val Asp Arg Asp Pro Gln Glu Gln Val Thr Pro Val Lys Tyr Ala Arg Leu Trp Ser Glu Ile Pro Ser Glu Ile Ala Ile Asp Asp Tyr Asp Ser Ser Gly Ala Ser Lys Asp Glu Ile Lys Glu Arg Phe Ala Gln Thr Met Glu Phe Val Glu Glu Tyr Leu Arg Asp Val Val Cys Gln Arg Phe Pro Phe Ser Asp Lys Glu Lys Asn Lys Leu Thr Phe Glu Val Val Asn Leu Ala Arq Asn Leu Ile Tyr Phe Gly Phe Tyr Asn Phe Ser Asp Leu Leu Arg Leu Thr Lys Ile Leu Leu Ala Ile Leu Asp Cys Val His Val Thr Thr Ile Phe Pro Ile Ser Lys Met Thr Lys Gly Glu Glu Asn Lys Gly Ser Asn Val Met Arg Ser Ile His Gly Val Gly Glu Leu Met Thr Gln Val Val Leu Arg Gly Gly Phe Leu Pro Met Thr Pro Met Ala Ala Ala Pro Glu Gly Asn Val Lys Gln Ala Glu Pro Glu Lys Glu Asp Ile Met Val Met Asp Thr Lys Leu Lys Ile Ile Glu Ile Leu Gln Phe Ile Leu Asn Val Arg Leu Asp Tyr Arg Ile Ser Cys Leu Leu Cys Ile Phe Lys Arg Glu Phe Asp Glu Ser Asn Ser Gln Ser Ser Glu Thr Ser Ser Gly Asn Ser Ser Gln Glu Gly Pro Ser Asn Val Pro Gly Ala Leu Asp Phe Glu His Ile Glu Glu Gln Ala Glu Gly Ile

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Phe															
	Gly	Gly	Ser	Glu 1045		Asn	Thr	Pro	Leu 1050	_	Leu	Asp	Asp	His 1055	_
Gly	71 ~~~	Thr	Dhe			1727	Lou	T 11			Thr	Mot	uic		
GIY	Arg	TIIL	1060		Arg	vaı	пеп	1065		Leu	IIII	Mec	1070		TYL
D	D	.			~ 1		T			T	D1	3			C
Pro	Pro			ser	-				Leu	Leu	Pne	_		Phe	ser
		1075					1080			_	_	1085			
Gln	Arg	Gln	Glu	Val	Leu	Gln	Ala	Phe	Lys	Gln	Val	Gln	Leu	Leu	Val
	1090					1095					1100				
Thr	Ser	Gln	Asp	Val	Asp	Asn	Tyr	Lys	Gln	Ile	Lys	Gln	Asp	Leu	Asp
1105					1110					1119					1120
Gln	Leu	Ara	Ser	Ile	Val	Glu	Lvs	Ser	Glu	Leu	Trp	Val	Tvr	Lys	Glv
				1125					1130					1135	
Gln	Gl v	Dro	Agn		-	Met	Δan	Glv			Glv	Glu	Δen	Glu	
0111	O + y	110	1140		110	1100	nop	1145		501	O _T	O_Lu	1150		1110
T	T	mb			a 1	TTIle se				T 011	T	TT			mb se
ьуs	гàг			GIU	GIY	Thr			Pro	ьeu	гÀв			Ser	THE
_	_	1159		_	_	-	1160				_	1165		_	_
			Asn	Tyr	Arg			Lys	Glu	Ile			Arg	Leu	ser
	1170					1175					1180				
Lys	Leu	Cys	Val	Gln	Glu	Ser	Ala	Ser	Val	Arg	Lys	Ser	Arg	Lys	Gln
1185					1190)				1195	5				1200
Gln	Gln	Arg	Leu	Leu	Arg	Asn	Met	Gly	Ala	His	Ala	Val	Val	Leu	Glu
		_		1205	5			_	1210)				1215	;
Leu	Leu	Gln	Ile	Pro	Tvr	Glu	Lvs	Ala	Glu	Asp	Thr	Lvs	Met	Gln	Glu
			1220		-1-		-1-	1225		F		-1-	1230		
Tle	Mat	λνα			Uic	Glu	Dhe			Λen	Dhe	Cvc		Gly	Λen
TTE	Mec	_		Ата	птр	Giu			GIII	ASII	FIIC	_		Gry	ASII
~-7	~ 7	1235			_	_	1240				_	1245			
GIn			GIn	Ala	Leu			гуs	His	Ile			Pne	Leu	Asn
	1250					1255					1260				
Pro	Gly	Ile	Leu	Glu	Ala	Val	\mathtt{Thr}	Met	Gln	His	Ile	Phe	Met	Asn	Asn
1265					1270)				1275	5				1280
Phe	Gln	Leu	Cys	Ser	Glu	Ile	Asn	Glu	Arg	Val	Val	Gln	His	Phe	Val
				1285	5				1290)				1295	;
TT	Cve	T1 -	~1	mla sa	TT -		-	70		~1 m	TT	T10	T	D1	
HIS		LLE	G 111	TITLE	HIS	GIV	Ara	ASII	Val	G 1.11	1 / L	116	LVS	Pne	Leu
HIS	Cys	тте			HIS	GIY	Arg		Val	GIII	TAT	116	_		Leu
	_		1300)		_	_	1309	5		_		1310)	
	_	Ile	1300 Val)		_	Gly	1309 Lys	5		_	Lys	1310 Cys		
Gln	Thr	Ile 1315	1300 Val	Lys	Ala	Glu	Gly 1320	1309 Lys)	Phe	Ile	Lys	Lys 1325	1310 Cys	Gln	Asp
Gln	Thr Val	Ile 1315 Met	1300 Val	Lys	Ala	Glu Val	Gly 1320 Asn	1309 Lys)	Phe	Ile	Lys Asp	Lys 1325 Val	1310 Cys)	Asp
Gln Met	Thr Val 1330	Ile 1315 Met	1300 Val 5 Ala	Lys Glu	Ala Leu	Glu Val 1335	Gly 1320 Asn	1309 Lys) Ser	Phe Gly	Ile Glu	Lys Asp 1340	Lys 1325 Val	1310 Cys Leu	Gln Val	Asp Phe
Gln Met Tyr	Thr Val 1330 Asn	Ile 1315 Met	1300 Val 5 Ala	Lys Glu	Ala Leu Ser	Glu Val 1339 Phe	Gly 1320 Asn	1309 Lys) Ser	Phe Gly	Ile Glu Ile	Lys Asp 1340 Gln	Lys 1325 Val	1310 Cys Leu	Gln	Asp Phe Ser
Gln Met Tyr 1345	Thr Val 1330 Asn	Ile 1315 Met) Asp	1300 Val 5 Ala Arg	Lys Glu Ala	Ala Leu Ser 1350	Glu Val 1335 Phe	Gly 1320 Asn Gln	1309 Lys) Ser Thr	Phe Gly Leu	Ile Glu Ile 1355	Lys Asp 1340 Gln	Lys 1325 Val) Met	1310 Cys Leu Met	Gln Val Arg	Asp Phe Ser 1360
Gln Met Tyr 1345	Thr Val 1330 Asn	Ile 1315 Met) Asp	1300 Val 5 Ala Arg	Lys Glu Ala	Ala Leu Ser 1350	Glu Val 1335 Phe	Gly 1320 Asn Gln	1309 Lys) Ser Thr	Phe Gly Leu	Ile Glu Ile 1355	Lys Asp 1340 Gln	Lys 1325 Val) Met	1310 Cys Leu Met	Gln Val	Asp Phe Ser 1360
Gln Met Tyr 1345	Thr Val 1330 Asn	Ile 1315 Met) Asp	1300 Val Ala Arg	Lys Glu Ala Met	Ala Leu Ser 1350 Asp	Glu Val 1335 Phe Glu	Gly 1320 Asn Gln Asn	1309 Lys Ser Thr	Phe Gly Leu Pro	Ile Glu Ile 1355 Leu	Lys Asp 1340 Gln he	Lys 1325 Val) Met Met	1310 Cys Leu Met	Gln Val Arg	Asp Phe Ser 1360 Ile
Gln Met Tyr 1345 Glu	Thr Val 1330 Asn Arg	Ile 1315 Met) Asp	1300 Val 5 Ala Arg	Lys Glu Ala Met	Ala Leu Ser 1350 Asp	Glu Val 1335 Phe) Glu	Gly 1320 Asn Gln Asn	1309 Lys Ser Thr	Phe Gly Leu Pro	Ile Glu Ile 1355 Leu	Lys Asp 1340 Gln Phe	Lys 1325 Val) Met Met	1310 Cys Leu Met	Gln Val Arg	Asp Phe Ser 1360 Ile
Gln Met Tyr 1345 Glu	Thr Val 1330 Asn Arg	Ile 1315 Met) Asp	1300 Val 5 Ala Arg	Lys Glu Ala Met 1365 Leu	Ala Leu Ser 1350 Asp	Glu Val 1335 Phe) Glu	Gly 1320 Asn Gln Asn	1309 Lys Ser Thr	Phe Gly Leu Pro 1370	Ile Glu Ile 1355 Leu	Lys Asp 1340 Gln Phe	Lys 1325 Val) Met Met	1310 Cys Leu Met	Gln Val Arg His 1375 Val	Asp Phe Ser 1360 Ile
Gln Met Tyr 1345 Glu His	Thr Val 1330 Asn Arg Leu	Ile 1315 Met) Asp Asp	1300 Val Ala Arg Arg Glu 1380	Lys Glu Ala Met 1365 Leu	Ala Leu Ser 1350 Asp Leu	Glu Val 1335 Phe Olu Ala	Gly 1320 Asn Gln Asn Val	Lys Ser Thr Ser Cys	Phe Gly Leu Pro 1370 Thr	Ile Glu Ile 1355 Leu O Glu	Asp 1340 Gln Dhe	Lys 1325 Val) Met Met	1310 Cys Leu Met Tyr Asn 1390	OGln Val Arg His 1375 Val	Asp Phe Ser 1360 Ile Tyr
Gln Met Tyr 1345 Glu His	Thr Val 1330 Asn Arg Leu	Ile 1315 Met) Asp Asp Val	1300 Val Ala Arg Arg Glu 1380 Lys	Lys Glu Ala Met 1365 Leu	Ala Leu Ser 1350 Asp Leu	Glu Val 1335 Phe Olu Ala	Gly 1320 Asn Gln Asn Val	Lys Ser Thr Ser Cys 1389	Phe Gly Leu Pro 1370 Thr	Ile Glu Ile 1355 Leu O Glu	Asp 1340 Gln Dhe	Lys 1325 Val) Met Met Lys	1310 Cys Leu Met Tyr Asn 1390 Ile	Gln Val Arg His 1375 Val	Asp Phe Ser 1360 Ile Tyr
Gln Met Tyr 1345 Glu His	Thr Val 1330 Asn Arg Leu Glu	Ile 1315 Met) Asp Asp Val Ile 1395	1300 Val Ala Arg Arg Glu 1380 Lys	Lys Glu Ala Met 1365 Leu Cys	Ala Leu Ser 1350 Asp Leu Asn	Glu Val 1335 Phe Glu Ala Ser	Gly 1320 Asn Gln Asn Val Leu 1400	Lys Ser Thr Ser Cys 1389 Leu	Phe Gly Leu Pro 1370 Thr	Ile Glu Ile 1355 Leu Glu Leu	Lys Asp 1340 Gln Phe Gly Asp	Lys 1325 Val Met Met Lys Asp 1405	1310 Cys Leu Met Tyr Asn 1390 Ile	OGln Val Arg His 1375 Val OVal	Asp Phe Ser 1360 Ile Tyr Arg
Gln Met Tyr 1345 Glu His	Thr Val 1330 Asn Arg Leu Glu Val	Ile 1315 Met) Asp Val Ile 1395 Thr	1300 Val Ala Arg Arg Glu 1380 Lys	Lys Glu Ala Met 1365 Leu Cys	Ala Leu Ser 1350 Asp Leu Asn	Glu Val 1335 Phe Glu Ala Ser Cys	Gly 1320 Asn Gln Asn Val Leu 1400 Ile	Lys Ser Thr Ser Cys 1389 Leu	Phe Gly Leu Pro 1370 Thr	Ile Glu Ile 1355 Leu Glu Leu	Lys Asp 1340 Gln Phe Gly Asp	Lys 1325 Val Met Met Lys Asp 1405 Ile	1310 Cys Leu Met Tyr Asn 1390 Ile	OGln Val Arg His 1375 Val	Asp Phe Ser 1360 Ile Tyr Arg
Gln Met Tyr 1345 Glu His Thr	Thr Val 1330 Asn Arg Leu Glu Val 1410	Ile 1315 Met Asp Asp Val Ile 1395 Thr	1300 Val Ala Arg Arg Glu 1380 Lys His	Dys Glu Ala Met 1365 Leu Cys Glu	Ala Leu Ser 1350 Asp Leu Asn Asp	Glu Val 1335 Phe Glu Ala Ser Cys 1415	Gly 1320 Asn Gln Asn Val Leu 1400 Ile	1309 Lys Ser Thr Ser Cys 1389 Leu	Phe Gly Leu Pro 1370 Thr Glu	Ile Glu Ile 1355 Leu Glu Leu Val	Asp 1340 Gln Fhe Gly Asp Lys 1420	Lys 1325 Val Met Met Lys Asp 1405 Ile	1310 Cys Leu Met Tyr Asn 1390 Ile	OGln Val Arg His 1375 Val Val	Asp Phe Ser 1360 Ile Tyr Arg Ile
Gln Met Tyr 1345 Glu His Thr Val Asn	Thr Val 1330 Asn Arg Leu Glu Val 1410 Phe	Ile 1315 Met Asp Asp Val Ile 1395 Thr	1300 Val Ala Arg Arg Glu 1380 Lys His	Dys Glu Ala Met 1365 Leu Cys Glu	Ala Leu Ser 1350 Asp Leu Asn Asp	Glu Val 1335 Phe Glu Ala Ser Cys 1415 Tyr	Gly 1320 Asn Gln Asn Val Leu 1400 Ile	1309 Lys Ser Thr Ser Cys 1389 Leu	Phe Gly Leu Pro 1370 Thr Glu	Ile Glu Ile 1355 Leu Glu Leu Val	Asp 1340 Gln Fhe Gly Asp Lys 1420 Val	Lys 1325 Val Met Met Lys Asp 1405 Ile	1310 Cys Leu Met Tyr Asn 1390 Ile	OGln Val Arg His 1375 Val OVal	Asp Phe Ser 1360 Ile Tyr Arg Ile Glu
Gln Met Tyr 1345 Glu His Thr Val Asn 1425	Thr Val 1330 Asn Arg Leu Glu Val 1410 Phe	Ile 1315 Met Asp Asp Val Ile 1395 Thr Leu	Arg Arg Glu 1386 Lys His	Lys Glu Ala Met 1365 Leu Cys Glu His	Ala Leu Ser 1350 Asp Leu Asn Asp Cys 1430	Glu Val 1335 Phe Glu Ala Ser Cys 1415 Tyr	Gly 1320 Asn Gln Asn Val Leu 1400 Ile Val	1309 Lys Ser Thr Ser Cys 1389 Leu Pro	Phe Gly Leu Pro 1370 Thr Glu Thr	Ile Glu Ile 1355 Leu Glu Leu Val Glu 1435	Asp 1340 Gln Phe Gly Asp Lys 1420 Val	Lys 1325 Val) Met Met Lys Asp 1405 Ile)	1310 Cys Leu Met Tyr Asn 1390 Ile Ala	OGln Val Arg His 1375 Val Val Tyr Lys	Asp Phe Ser 1360 Ile Tyr Arg Ile Glu 1440
Gln Met Tyr 1345 Glu His Thr Val Asn 1425	Thr Val 1330 Asn Arg Leu Glu Val 1410 Phe	Ile 1315 Met Asp Asp Val Ile 1395 Thr Leu	Arg Arg Glu 1386 Lys His	Lys Glu Ala Met 1365 Leu Cys Glu His	Ala Leu Ser 1350 Asp Leu Asn Asp Cys 1430	Glu Val 1335 Phe Glu Ala Ser Cys 1415 Tyr	Gly 1320 Asn Gln Asn Val Leu 1400 Ile Val	1309 Lys Ser Thr Ser Cys 1389 Leu Pro	Phe Gly Leu Pro 1370 Thr Glu	Ile Glu Ile 1355 Leu Glu Leu Val Glu 1435	Asp 1340 Gln Phe Gly Asp Lys 1420 Val	Lys 1325 Val) Met Met Lys Asp 1405 Ile)	1310 Cys Leu Met Tyr Asn 1390 Ile Ala	OGln Val Arg His 1375 Val Val	Asp Phe Ser 1360 Ile Tyr Arg Ile Glu 1440
Gln Met Tyr 1345 Glu His Thr Val Asn 1425	Thr Val 1330 Asn Arg Leu Glu Val 1410 Phe	Ile 1315 Met Asp Asp Val Ile 1395 Thr Leu	Arg Arg Glu 1386 Lys His	Lys Glu Ala Met 1365 Leu Cys Glu His	Ala Leu Ser 1350 Asp Leu Asn Asp Cys 1430 His	Glu Val 1335 Phe Glu Ala Ser Cys 1415 Tyr	Gly 1320 Asn Gln Asn Val Leu 1400 Ile Val	1309 Lys Ser Thr Ser Cys 1389 Leu Pro	Phe Gly Leu Pro 1370 Thr Glu	Ile Glu Ile 1355 Leu Glu Leu Val Glu 1435 Phe	Asp 1340 Gln Phe Gly Asp Lys 1420 Val	Lys 1325 Val) Met Met Lys Asp 1405 Ile)	1310 Cys Leu Met Tyr Asn 1390 Ile Ala	OGln Val Arg His 1375 Val Val Tyr Lys	Asp Phe Ser 1360 Ile Tyr Arg Ile Glu 1440 Val
Gln Met Tyr 1345 Glu His Thr Val Asn 1425 Ile	Thr Val 1330 Asn Arg Leu Glu Val 1410 Phe	Ile 1319 Met) Asp Val Ile 1399 Thr) Leu	Ala Arg Arg Glu 1380 Lys His Asn Ser	Lys Glu Ala Met 1365 Leu Cys Glu His Asn 1445	Ala Leu Ser 1350 Asp Leu Asn Asp Cys 1430 His	Glu Val 1335 Phe Glu Ala Ser Cys 1415 Tyr Met	Gly 1320 Asn Gln Asn Val Leu 1400 Ile Val	1309 Lys Ser Thr Ser Cys 1389 Leu Pro Asp	Phe Gly Leu Pro 1370 Thr Clu Thr Leu 1450	Ile Glu Ile 1355 Leu Glu Leu Val Glu 1435 Phe	Asp 1340 Gln Phe Gly Asp Lys 1420 Val	Lys 1325 Val Met Met Lys Asp 1405 Ile Glu Asn	1310 Cys Leu Met Tyr Asn 1390 Ile Ala Met	OGln Val Arg His 1375 Val Val Tyr Lys Leu	Asp Phe Ser 1360 Ile Tyr Arg Ile Glu 1440 Val
Gln Met Tyr 1345 Glu His Thr Val Asn 1425 Ile	Thr Val 1330 Asn Arg Leu Glu Val 1410 Phe	Ile 1319 Met) Asp Val Ile 1399 Thr) Leu	Ala Arg Arg Glu 1380 Lys His Asn Ser	Lys Glu Ala Met 1365 Leu Cys Glu His Asn 1445 Ala	Ala Leu Ser 1350 Asp Leu Asn Asp Cys 1430 His	Glu Val 1335 Phe Glu Ala Ser Cys 1415 Tyr Met	Gly 1320 Asn Gln Asn Val Leu 1400 Ile Val	1309 Lys Ser Thr Ser Cys 1389 Leu Pro Asp	Phe Gly Leu Pro 1370 Thr Fro Glu Thr Leu 1450 Ser	Ile Glu Ile 1355 Leu Glu Leu Val Glu 1435 Phe	Asp 1340 Gln Phe Gly Asp Lys 1420 Val	Lys 1325 Val Met Met Lys Asp 1405 Ile Glu Asn	1310 Cys Leu Met Tyr Asn 1390 Ile Ala Met	OGln Val Arg His 1375 Val Val Tyr Lys Leu 1455 Ala	Asp Phe Ser 1360 Ile Tyr Arg Ile Glu 1440 Val
Gln Met Tyr 1345 Glu His Thr Val Asn 1425 Ile	Thr Val 1330 Asn Arg Leu Glu Val 1410 Phe Tyr	Ile 1319 Met Asp Val Ile 1399 Thr Leu Thr	1300 Val Ala Arg Arg Glu 1380 Lys His Asn Ser Arg	Lys Glu Ala Met 1365 Leu Cys Glu His Asn 1445 Ala	Ala Leu Ser 1350 Asp Leu Asn Asp Cys 1430 His Cys	Glu Val 1335 Phe Glu Ala Ser Cys 1415 Tyr Met Asn	Gly 1320 Asn Gln Asn Val Leu 1400 Ile Val Trp	1309 Lys Ser Thr Ser Cys 1389 Leu Pro Asp Lys Thr 1469	Phe Gly Leu Pro 1370 Thr Clu Thr Leu 1450 Ser	Ile Glu Ile 1355 Leu Glu Leu Val Glu 1435 Phe Asp	Lys Asp 1340 Gln Phe Gly Asp Lys 1420 Val Glu Arg	Lys 1325 Val Net Met Lys Asp 1405 Ile Glu Asn Lys	1310 Cys Leu Met Tyr Asn 1390 Ile Ala Met Phe	OGln Val Arg His 1375 Val Val Tyr Lys Leu 1455 Ala	Asp Phe Ser 1360 Ile Tyr Arg Ile Glu 1440 Val Asp
Gln Met Tyr 1345 Glu His Thr Val Asn 1425 Ile	Thr Val 1330 Asn Arg Leu Glu Val 1410 Phe Tyr	Ile 1319 Met Asp Asp Val Ile 1399 Thr Leu Thr Cys Leu	Arg Arg Glu 1380 Lys His Asn Ser Arg Glu 60	Lys Glu Ala Met 1365 Leu Cys Glu His Asn 1445 Ala	Ala Leu Ser 1350 Asp Leu Asn Asp Cys 1430 His Cys	Glu Val 1335 Phe Glu Ala Ser Cys 1415 Tyr Met Asn	Gly 1320 Asn Gln Asn Val Leu 1400 Ile Val Trp Asn	1309 Lys Ser Thr Ser Cys 1389 Leu Pro Asp Lys Thr 1469 Glu	Phe Gly Leu Pro 1370 Thr Clu Thr Leu 1450 Ser	Ile Glu Ile 1355 Leu Glu Leu Val Glu 1435 Phe Asp	Lys Asp 1340 Gln Phe Gly Asp Lys 1420 Val Glu Arg	Lys 1325 Val Met Met Lys Asp 1405 Ile Glu Asn Lys Ser	1310 Cys Leu Met Tyr Asn 1390 Ile Ala Met Phe His 1470 Ile	OGln Val Arg His 1375 Val Val Tyr Lys Leu 1455 Ala	Asp Phe Ser 1360 Ile Tyr Arg Ile Glu 1440 Val Asp
Gln Met Tyr 1345 Glu His Thr Val Asn 1425 Ile Asp Ser	Thr Val 1330 Asn Arg Leu Glu Val 1410 Phe Tyr Ile Val	Ile 1319 Met Asp Val Ile 1399 Thr Leu Thr Cys Leu 1479	Ala Arg Arg Glu 1380 Lys His Asn Ser Arg 1460 Glu	Lys Glu Ala Met 1365 Leu Cys Glu His Asn 1445 Ala Lys	Ala Leu Ser 1350 Asp Leu Asn Asp Cys 1430 His Cys	Glu Val 1335 Phe Glu Ala Ser Cys 1415 Tyr Met Asn Val	Gly 1320 Asn Gln Asn Val Leu 1400 Ile Val Trp Asn Thr	1309 Lys Ser Thr Ser Cys 1389 Leu Pro Asp Lys Thr 1469 Glu	Phe Gly Leu Pro 1370 Thr Fro Glu Thr Leu 1450 Ser Ile	Ile Glu Ile 1355 Leu Glu Leu Val Glu 1435 Phe Asp Val	Asp 1340 Gln Phe Gly Asp Lys 1420 Val Glu Arg	Lys 1325 Val Met Met Lys Asp 1405 Ile Glu Asn Lys Ser 1485	1310 Cys Leu Met Tyr Asn 1390 Ile Ala Met Phe His 1470 Ile	OGln Val Arg His 1375 Val Val Lys Leu 1455 Ala OVal	Asp Phe Ser 1360 Ile Tyr Arg Ile Glu 1440 Val Asp Thr
Gln Met Tyr 1345 Glu His Thr Val Asn 1425 Ile Asp Ser	Thr Val 1330 Asn Arg Leu Glu Val 1410 Phe Tyr Ile Val Phe	Ile 1319 Met Asp Asp Val Ile 1399 Thr Leu Thr Cys Leu 1479 Phe	Ala Arg Arg Glu 1380 Lys His Asn Ser Arg 1460 Glu	Lys Glu Ala Met 1365 Leu Cys Glu His Asn 1445 Ala Lys	Ala Leu Ser 1350 Asp Leu Asn Asp Cys 1430 His Cys	Glu Val 1335 Phe Glu Ala Ser Cys 1415 Tyr Met Asn Val	Gly 1320 Asn Gln Asn Val Leu 1400 Ile Val Trp Asn Thr 1480 Ser	1309 Lys Ser Thr Ser Cys 1389 Leu Pro Asp Lys Thr 1469 Glu	Phe Gly Leu Pro 1370 Thr Fro Glu Thr Leu 1450 Ser Ile	Ile Glu Ile 1355 Leu Glu Leu Val Glu 1435 Phe Asp Val	Asp 1340 Gln Phe Gly Asp Lys 1420 Val Glu Arg Met	Lys 1325 Val Met Met Lys Asp 1405 Ile Glu Asn Lys Ser 1485 Thr	1310 Cys Leu Met Tyr Asn 1390 Ile Ala Met Phe His 1470 Ile	OGln Val Arg His 1375 Val Val Tyr Lys Leu 1455 Ala	Asp Phe Ser 1360 Ile Tyr Arg Ile Glu 1440 Val Asp Thr
Gln Met Tyr 1345 Glu His Thr Val Asn 1425 Ile Asp Ser Thr	Thr Val 1330 Asn Arg Leu Glu Val 1410 Phe Tyr Ile Val Phe 1490	Ile 1319 Met Asp Val Ile 1399 Thr Leu Thr Cys Leu 1479 Phe	Ala Arg Arg Glu 1380 Lys His Asn Ser Arg 1460 Glu Ser	Lys Glu Ala Met 1365 Leu Cys Glu His Asn 1445 Ala Lys Ser	Ala Leu Ser 1350 Asp Leu Asn Asp Cys 1430 His Cys Tyr	Glu Val 1335 Phe Glu Ala Ser Cys 1415 Tyr Met Asn Val Phe 1495	Gly 1320 Asn Gln Asn Val Leu 1400 Ile Val Trp Asn Thr 1480 Ser	1309 Lys Ser Thr Ser Cys 1389 Leu Pro Asp Lys Thr 1469 Glu Asp	Phe Gly Leu Pro 1370 Thr Pro Glu Thr Leu 1450 Ser Ile Gln	Ile Glu Ile 1355 Leu Glu Leu Val Glu 1435 Phe Asp Val Ser	Asp 1340 Gln Phe Gly Asp Lys 1420 Val Glu Arg Met Thr	Lys 1325 Val Met Met Lys Asp 1405 Ile Glu Asn Lys Ser 1485 Thr	1310 Cys Leu Met Tyr Asn 1390 Ile Ala Met Phe His 1470 Ile	OGln Val Arg His 1375 Val Val Lys Leu 1455 Ala Val Gln	Asp Phe Ser 1360 Ile Tyr Arg Ile Glu 1440 Val Asp Thr
Gln Met Tyr 1345 Glu His Thr Val Asn 1425 Ile Asp Ser Thr	Thr Val 1330 Asn Arg Leu Glu Val 1410 Phe Tyr Ile Val Phe 1490 Gln	Ile 1319 Met Asp Val Ile 1399 Thr Leu Thr Cys Leu 1479 Phe	Ala Arg Arg Glu 1380 Lys His Asn Ser Arg 1460 Glu Ser	Lys Glu Ala Met 1365 Leu Cys Glu His Asn 1445 Ala Lys Ser	Ala Leu Ser 1350 Asp Leu Asn Cys 1430 His Cys Tyr Pro Val	Glu Val 1339 Phe Glu Ala Ser Cys 1419 Tyr Met Asn Val Phe 1499 Gln	Gly 1320 Asn Gln Asn Val Leu 1400 Ile Val Trp Asn Thr 1480 Ser	1309 Lys Ser Thr Ser Cys 1389 Leu Pro Asp Lys Thr 1469 Glu Asp	Phe Gly Leu Pro 1370 Thr Pro Glu Thr Leu 1450 Ser Ile Gln	Glu Ile 1355 Leu Glu Leu Val Glu 1435 Phe Asp Val Ser Gly	Asp 1340 Gln Phe Gly Asp Lys 1420 Val Glu Arg Met Thr 1500 Val	Lys 1325 Val Met Met Lys Asp 1405 Ile Glu Asn Lys Ser 1485 Thr	1310 Cys Leu Met Tyr Asn 1390 Ile Ala Met Phe His 1470 Ile	OGln Val Arg His 1375 Val Val Lys Leu 1455 Ala OVal	Asp Phe Ser 1360 Ile Tyr Arg Ile Glu 1440 Val Asp Thr Tyr
Gln Met Tyr 1345 Glu His Thr Val Asn 1425 Ile Asp Ser Thr	Thr Val 1330 Asn Arg Leu Glu Val 1410 Phe Tyr Ile Val Phe 1490 Gln	Ile 1319 Met Asp Val Ile 1399 Thr Leu Thr Cys Leu 1479 Phe	Ala Arg Arg Glu 1380 Lys His Asn Ser Arg 1460 Glu Ser	Lys Glu Ala Met 1365 Leu Cys Glu His Asn 1445 Ala Lys Ser	Ala Leu Ser 1350 Asp Leu Asn Asp Cys 1430 His Cys Tyr	Glu Val 1339 Phe Glu Ala Ser Cys 1419 Tyr Met Asn Val Phe 1499 Gln	Gly 1320 Asn Gln Asn Val Leu 1400 Ile Val Trp Asn Thr 1480 Ser	1309 Lys Ser Thr Ser Cys 1389 Leu Pro Asp Lys Thr 1469 Glu Asp	Phe Gly Leu Pro 1370 Thr Pro Glu Thr Leu 1450 Ser Ile Gln	Ile Glu Ile 1355 Leu Glu Leu Val Glu 1435 Phe Asp Val Ser	Asp 1340 Gln Phe Gly Asp Lys 1420 Val Glu Arg Met Thr 1500 Val	Lys 1325 Val Met Met Lys Asp 1405 Ile Glu Asn Lys Ser 1485 Thr	1310 Cys Leu Met Tyr Asn 1390 Ile Ala Met Phe His 1470 Ile	OGln Val Arg His 1375 Val Val Lys Leu 1455 Ala Val Gln	Asp Phe Ser 1360 Ile Tyr Arg Ile Glu 1440 Val Asp Thr

His Cys Asn	Trp Leu Met 1525	Pro Ser	Gln Lys 153		Val Glu	Ser Cys 1535
Ile Arg Val	Leu Ser Asp 1540	Val Ala	Lys Ser 1545	Arg Ala	Ile Ala	
Val Asp Leu 155	Asp Ser Gln 5	Val Asn 156		Phe Leu	Lys Ser 1565	His Asn
Ile Val Gln 1570	Lys Thr Ala	Met Asn 1575	Trp Arg	Leu Ser 158		y Asn Ala
Ala Arg Arg 1585	Asp Ser Val		Ala Ser	Arg Asp 1595	Tyr Arg	Asn Ile 1600
	Leu Gln Asp 1605		161	0		1615
	Gln Ala Glu 1620		1625		163	30
163		164	0		1645	
1650	Phe Ile Cys	1655		166	0	
1665	Glu Glu Lys 167	0	_	1675		1680
	Thr Lys Asp 1685		169	0		1695
	Leu Val Asn 1700		1705		173	L O
171		172	0		1725	
1730	Lys Pro Gly	1735		174	0	_
1745	Gly Glu Met 175	0		1755	_	1760
	Ala Ser Asn 1765		177	0		1775
	Val Phe His		1785		179	90
179		180	0		1805	
1810	Lys Ser Glu	1815	_	182	0 _	_
1825	Gln Gln Glu 183	0		1835		1840
_			185	0		1855
	Lys Ala Lys 1860		1865		187	70
187	_	188	0	_	1885	
1890	Arg Glu Ala	1895		190	0	
Gly Thr Gln 1905	Ala Thr Thr 191		Ala Lys	Asp Asp 1915	Leu Glu	Met Ser 1920
	Thr Ile Met 1925		193	0		1935
Cys Glu Asn	His Asn Arg 1940	Asp Leu	Gln Asn 1945	Phe Leu	Arg Cys	
195		196	0		1965	
Cys Ile Cys 1970	Gly Ser Thr	Thr Gly	Gly Leu	Gly Leu 198		Leu Tyr
Ile Asn Glu 1985	Lys Asn Val		lle Asn	Gln Thr 1995	Leu Gli	Ser Leu 2000

Thr His Glu Ser Asn Gly Ile Asp Ile Ile Thr Ala Leu Ile Leu Asn 2020 2030 Asp Ile Asn Pro Leu Gly Lys Lys Arg Met Asp Leu Val Leu Glu Leu 2035 2040 2045 Lys Asn Asn Ala Ser Lys Leu Leu Leu Ala Ile Met Glu Ser Arg His 2050 2055 2060 Asp Ser Glu Asn Ala Glu Arg Ile Leu Tyr Asn Met Arg Pro Lys Glu 2065 2070 2075 2080 Leu Val Glu Val Ile Lys Lys Ala Tyr Met Gln Gly Glu Val Glu Phe 2085 2090 2095 Glu Asp Gly Glu Asn Gly Glu Asp Gly Ala Ala Ser Pro Arg Asn Val 2100 2105 2110 Gly His Asn Ile Tyr Ile Leu Ala His Gln Leu Ala Arg His Asn Lys 2115 2120 2125 Glu Leu Gln Thr Met Leu Lys Pro Gly Gly Gln Val Asp Gly Asp Glu 2130
Lys Asn Asn Ala Ser Lys Leu Leu Leu Ala Ile Met Glu Ser Arg His $205 \ \ \ \ \ \ \ \ \ \ \ \ \ $
Asp Ser Glu Asn Ala Glu Arg Ile Leu Tyr Asn Met Arg Pro Lys Glu 2065
2065 2070 2075 2080 Leu Val Glu Val Ile Lys Lys Ala Tyr Met Gln Gly Glu Val Glu Phe 2085 2090 2095 Glu Asp Gly Glu Asn Gly Glu Asp Gly Ala Ala Ser Pro Arg Asn Val 2100 2105 2110 Gly His Asn Ile Tyr Ile Leu Ala His Gln Leu Ala Arg His Asn Lys 2115 2120 2125 Glu Leu Gln Thr Met Leu Lys Pro Gly Gly Gln Val Asp Gly Asp Glu
2085 2090 2095 Glu Asp Gly Glu Asn Gly Glu Asp Gly Ala Ala Ser Pro Arg Asn Val 2100 2105 2110 Gly His Asn Ile Tyr Ile Leu Ala His Gln Leu Ala Arg His Asn Lys 2115 2120 2125 Glu Leu Gln Thr Met Leu Lys Pro Gly Gly Gln Val Asp Gly Asp Glu
2100 2105 2110 Gly His Asn Ile Tyr Ile Leu Ala His Gln Leu Ala Arg His Asn Lys 2115 2120 2125 Glu Leu Gln Thr Met Leu Lys Pro Gly Gly Gln Val Asp Gly Asp Glu
2115 2120 2125 Glu Leu Gln Thr Met Leu Lys Pro Gly Gly Gln Val Asp Gly Asp Glu
Ala Leu Glu Phe Tyr Ala Lys His Thr Ala Gln Ile Glu Ile Val Arg 2145 2150 2155 2160
Leu Asp Arg Thr Met Glu Gln Ile Val Phe Pro Val Pro Ser Ile Cys 2165 2170 2175
Glu Phe Leu Thr Lys Glu Ser Lys Leu Arg Ile Tyr Tyr Thr Thr Glu 2180 2185 2190
Arg Asp Glu Gln Gly Ser Lys Ile Asn Asp Phe Phe Leu Arg Ser Glu 2195 2200 2205
Asp Leu Phe Asn Glu Met Asn Trp Gln Lys Lys Leu Arg Ala Gln Pro 2210 2215 2220
Val Leu Tyr Trp Cys Ala Arg Asn Met Ser Phe Trp Ser Ser Ile Ser 2225 2230 2235 2240
Phe Asn Leu Ala Val Leu Met Asn Leu Leu Val Ala Phe Phe Tyr Pro 2245 2250 2255
Phe Lys Gly Val Arg Gly Gly Thr Leu Glu Pro His Trp Ser Gly Leu 2260 2265 2270
Leu Trp Thr Ala Met Leu Ile Ser Leu Ala Ile Val Ile Ala Leu Pro 2275 2280 2285
Lys Pro His Gly Ile Arg Ala Leu Ile Ala Ser Thr Ile Leu Arg Leu 2290 2295 2300
Ile Phe Ser Val Gly Leu Gln Pro Thr Leu Phe Leu Leu Gly Ala Phe2305231023152320
Asn Val Cys Asn Lys Ile Ile Phe Leu Met Ser Phe Val Gly Asn Cys 2325 2330 2335
Gly Thr Phe Thr Arg Gly Tyr Arg Ala Met Val Leu Asp Val Glu Phe 2340 2345 2350
Leu Tyr His Leu Leu Tyr Leu Leu Ile Cys Ala Met Gly Leu Phe Val 2355 2360 2365
His Glu Phe Phe Tyr Ser Leu Leu Leu Phe Asp Leu Val Tyr Arg Glu 2370 2375 2380
Glu Thr Leu Leu Asn Val Ile Lys Ser Val Thr Arg Asn Gly Arg Pro 2385 2390 2395 2400
Ile Ile Leu Thr Ala Ala Leu Ala Leu Ile Leu Val Tyr Leu Phe Ser 2405 2410 2415
Ile Val Gly Tyr Leu Phe Phe Lys Asp Asp Phe Ile Leu Glu Val Asp 2420 2425 2430
Arg Leu Pro Asn Glu Thr Ala Gly Pro Glu Thr Gly Glu Ser Leu Ala 2435 2440 2445
Asn Asp Phe Leu Tyr Ser Asp Val Cys Arg Val Glu Thr Gly Glu Asn 2450 2455 2460
Cys Thr Ser Pro Ala Pro Lys Glu Glu Leu Leu Pro Val Glu Glu Thr 2465 2470 2475 2480

Glu Gln Asp Lys Glu His Thr Cys Glu Thr Leu Leu Met Cys Ile Val 2490 2485 Thr Val Leu Ser His Gly Leu Arg Ser Gly Gly Gly Val Gly Asp Val 2500 2505 Leu Arg Lys Pro Ser Lys Glu Glu Pro Leu Phe Ala Ala Arg Val Ile 2515 2520 Tyr Asp Leu Leu Phe Phe Phe Met Val Ile Ile Val Leu Asn Leu 2535 2540 Ile Phe Gly Val Ile Ile Asp Thr Phe Ala Asp Leu Arg Ser Glu Lys 2550 2555 Gln Lys Lys Glu Glu Ile Leu Lys Thr Thr Cys Phe Ile Cys Gly Leu 2565 2570 2575 Glu Arg Asp Lys Phe Asp Asn Lys Thr Val Thr Phe Glu Glu His Ile 2580 2585 2590 Lys Glu Glu His Asn Met Trp His Tyr Leu Cys Phe Ile Val Leu Val 2595 2600 2605 Lys Val Lys Asp Ser Thr Glu Tyr Thr Gly Pro Glu Ser Tyr Val Ala 2615 2620 Glu Met Ile Arg Glu Arg Asn Leu Asp Trp Phe Pro Arg Met Arg Ala 2630 2635 Met Ser Leu Val Ser Ser Asp Ser Glu Gly Glu Gln Asn Glu Leu Arg 2645 2650 Asn Leu Gln Glu Lys Leu Glu Ser Thr Met Lys Leu Val Thr Asn Leu 2665 Ser Gly Gln Leu Ser Glu Leu Lys Asp Gln Met Thr Glu Gln Arg Lys 2675 2680 2685 Gln Lys Gln Arg Ile Gly Leu Leu Gly His Pro Pro His Met Asn Val 2690 2695 2700 Asn Pro Gln Gln Pro Ala 2710 <210> 18 <211> 2749 <212> PRT <213> Artificial Sequence <223> Description of Artificial Sequence:/note = synthetic construct Met Ser Asp Lys Met Ser Ser Phe Leu His Ile Gly Asp Ile Cys Ser 10 Leu Tyr Ala Glu Gly Ser Thr Asn Gly Phe Ile Ser Thr Leu Gly Leu 25 Val Asp Asp Arg Cys Val Val Gln Pro Glu Ala Gly Asp Leu Asn Asn 40 45 Pro Pro Lys Lys Phe Arg Asp Cys Leu Phe Lys Leu Cys Pro Met Asn 55 60 Arg Tyr Ser Ala Gln Lys Gln Phe Trp Lys Ala Ala Lys Pro Gly Ala 70 75 Asn Ser Thr Thr Asp Ala Val Leu Leu Asn Lys Leu His His Ala Ala 85 90 Asp Leu Glu Lys Lys Gln Asn Glu Thr Glu Asn Arg Lys Leu Leu Gly 105 100 Thr Val Ile Gln Tyr Gly Asn Val Ile Gln Leu Leu His Leu Lys Ser

125

140

120

135

130

Asn Lys Tyr Leu Thr Val Asn Lys Arg Leu Pro Ala Leu Leu Glu Lys

Asn Ala Met Arg Val Thr Leu Asp Glu Ala Gly Asn Glu Gly Ser Trp 150 155 Phe Tyr Ile Gln Pro Phe Tyr Lys Leu Arg Ser Ile Gly Asp Ser Val 170 Val Ile Gly Asp Lys Val Val Leu Asn Pro Val Asn Ala Gly Gln Pro 185 Leu His Ala Ser Ser His Gln Leu Val Asp Asn Pro Gly Cys Asn Glu 200 Val Asn Ser Val Asn Cys Asn Thr Ser Trp Lys Ile Val Leu Phe Met 215 220 Lys Trp Ser Asp Asn Lys Asp Asp Ile Leu Lys Gly Gly Asp Val Val 235 230 Arg Leu Phe His Ala Glu Glu Glu Lys Phe Leu Thr Cys Asp Glu His 245 250 Arg Lys Lys Gln His Val Phe Leu Arg Thr Thr Gly Arg Gln Ser Ala 265 Thr Ser Ala Thr Ser Ser Lys Ala Leu Trp Glu Val Glu Val Val Gln 280 His Asp Pro Cys Arg Gly Gly Ala Gly Tyr Trp Asn Ser Leu Phe Arg 295 Phe Lys His Leu Ala Thr Gly His Tyr Leu Ala Ala Glu Val Asp Pro Asp Phe Glu Glu Glu Cys Leu Glu Phe Gln Pro Ser Val Asp Pro Asp 330 Gln Asp Ala Ser Arg Ser Arg Leu Arg Asn Ala Gln Glu Lys Met Val 345 Tyr Ser Leu Val Ser Val Pro Glu Gly Asn Asp Ile Ser Ser Ile Phe 360 Glu Leu Asp Pro Thr Thr Leu Arg Gly Gly Asp Ser Leu Val Pro Arg 375 380 Asn Ser Tyr Val Arg Leu Arg His Leu Cys Thr Asn Thr Trp Val His 395 390 Ser Thr Asn Ile Pro Ile Asp Lys Glu Glu Glu Lys Pro Val Met Leu 405 410 Lys Ile Gly Thr Ser Pro Leu Lys Glu Asp Lys Glu Ala Phe Ala Ile 420 425 Val Pro Val Ser Pro Ala Glu Val Arg Asp Leu Asp Phe Ala Asn Asp 440 Ala Ser Lys Val Leu Gly Ser Ile Ala Gly Lys Leu Glu Lys Gly Thr 455 Ile Thr Gln Asn Glu Arg Arg Ser Val Thr Lys Leu Leu Glu Asp Leu 470 475 Val Tyr Phe Val Thr Gly Gly Thr Asn Ser Gly Gln Asp Val Leu Glu 485 490 Val Val Phe Ser Lys Pro Asn Arg Glu Arg Gln Lys Leu Met Arg Glu 505 Gln Asn Ile Leu Lys Gln Ile Phe Lys Leu Leu Gln Ala Pro Phe Thr 520 Asp Cys Gly Asp Gly Pro Met Leu Arg Leu Glu Glu Leu Gly Asp Gln 535 540 Arg His Ala Pro Phe Arg His Ile Cys Arg Leu Cys Tyr Arg Val Leu 555 550 Arg His Ser Gln Gln Asp Tyr Arg Lys Asn Gln Glu Tyr Ile Ala Lys 565 570 Gln Phe Gly Phe Met Gln Lys Gln Ile Gly Tyr Asp Val Leu Ala Glu 580 585 Asp Thr Ile Thr Ala Leu Leu His Asn Asn Arg Lys Leu Leu Glu Lys 600 605 His Ile Thr Ala Ala Glu Ile Asp Thr Phe Val Ser Leu Val Arg Lys 615

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Asn Arg Glu Pro Arg Phe Leu Asp Tyr Leu Ser Asp Leu Cys Val Ser 630 635 Met Asn Lys Ser Ile Pro Val Thr Gln Glu Leu Ile Cys Lys Ala Val 645 650 Leu Asn Pro Thr Asn Ala Asp Ile Leu Ile Glu Thr Lys Leu Val Leu 665 Ser Arg Phe Glu Phe Glu Gly Val Ser Thr Gly Glu Asn Ala Leu Glu 680 Ala Gly Glu Asp Glu Glu Glu Val Trp Leu Phe Trp Arg Asp Ser Asn 700 695 Lys Glu Ile Arg Ser Lys Ser Val Arg Glu Leu Ala Gln Asp Ala Lys 710 Glu Gly Gln Lys Glu Asp Arg Asp Val Leu Ser Tyr Tyr Arg Tyr Gln 725 730 Leu Asn Leu Phe Ala Arg Met Cys Leu Asp Arg Gln Tyr Leu Ala Ile 745 Asn Glu Ile Ser Gly Gln Leu Asp Val Asp Leu Ile Leu Arg Cys Met 760 Ser Asp Glu Asn Leu Pro Tyr Asp Leu Arg Ala Ser Phe Cys Arg Leu 775 780 Met Leu His Met His Val Asp Arg Asp Pro Gln Glu Gln Val Thr Pro 790 795 Val Lys Tyr Ala Arg Leu Trp Ser Glu Ile Pro Ser Glu Ile Ala Ile 810 805 Asp Asp Tyr Asp Ser Ser Gly Ala Ser Lys Asp Glu Ile Lys Glu Arg 820 825 Phe Ala Gln Thr Met Glu Phe Val Glu Glu Tyr Leu Arg Asp Val Val 840 845 Cys Gln Arg Phe Pro Phe Ser Asp Lys Glu Lys Asn Lys Leu Thr Phe 855 860 Glu Val Val Asn Leu Ala Arg Asn Leu Ile Tyr Phe Gly Phe Tyr Asn 870 875 Phe Ser Asp Leu Leu Arg Leu Thr Lys Ile Leu Leu Ala Ile Leu Asp 890 885 Cys Val His Val Thr Thr Ile Phe Pro Ile Ser Lys Met Thr Lys Gly 905 Glu Glu Asn Lys Gly Ser Asn Val Met Arg Ser Ile His Gly Val Gly 920 925 Glu Leu Met Thr Gln Val Val Leu Arg Gly Gly Phe Leu Pro Met 935 940 Thr Pro Met Ala Ala Ala Pro Glu Gly Asn Val Lys Gln Ala Glu Pro 955 950 Glu Lys Glu Asp Ile Met Val Met Asp Thr Lys Leu Lys Ile Ile Glu 970 965 Ile Leu Gln Phe Ile Leu Asn Val Arg Leu Asp Tyr Arg Ile Ser Cys 980 985 Leu Leu Cys Ile Phe Lys Arg Glu Phe Asp Glu Ser Asn Ser Gln Ser 1000 1005 Ser Glu Thr Ser Ser Gly Asn Ser Ser Gln Glu Gly Pro Ser Asn Val 1010 1015 1020 Pro Gly Ala Leu Asp Phe Glu His Ile Glu Glu Gln Ala Glu Gly Ile 1030 1035 Phe Gly Gly Ser Glu Glu Asn Thr Pro Leu Asp Leu Asp Asp His Gly 1050 1055 Gly Arg Thr Phe Leu Arg Val Leu Leu His Leu Thr Met His Asp Tyr 1065 Pro Pro Leu Val Ser Gly Ala Leu Gln Leu Leu Phe Arg His Phe Ser 1080 1085 Gln Arg Gln Glu Val Leu Gln Ala Phe Lys Gln Val Gln Leu Leu Val 1095 1100

Thr Ser Gln Asp Val Asp Asn Tyr Lys Gln Ile Lys Gln Asp Leu Asp 1110 1115 Gln Leu Arg Ser Ile Val Glu Lys Ser Glu Leu Trp Val Tyr Lys Gly 1125 1130 Gln Gly Pro Asp Glu Pro Met Asp Gly Ala Ser Gly Glu Asn Glu His 1145 Lys Lys Thr Glu Glu Gly Thr Ser Lys Pro Leu Lys His Glu Ser Thr 1160 1165 Ser Ser Tyr Asn Tyr Arg Val Val Lys Glu Ile Leu Ile Arg Leu Ser 1170 1175 1180 Lys Leu Cys Val Gln Glu Ser Ala Ser Val Arg Lys Ser Arg Lys Gln 1190 1195 Gln Gln Arg Leu Leu Arg Asn Met Gly Ala His Ala Val Val Leu Glu 1205 1210 1215 Leu Leu Gln Ile Pro Tyr Glu Lys Ala Glu Asp Thr Lys Met Gln Glu 1220 1225 1230 Ile Met Arg Leu Ala His Glu Phe Leu Gln Asn Phe Cys Ala Gly Asn 1240 1245 Gln Gln Asn Gln Ala Leu Leu His Lys His Ile Asn Leu Phe Leu Asn 1250 1255 1260 Pro Gly Ile Leu Glu Ala Val Thr Met Gln His Ile Phe Met Asn Asn 1270 1275 Phe Gln Leu Cys Ser Glu Ile Asn Glu Arg Val Val Gln His Phe Val 1285 1290 1295 His Cys Ile Glu Thr His Gly Arg Asn Val Gln Tyr Ile Lys Phe Leu 1300 1305 Gln Thr Ile Val Lys Ala Glu Gly Lys Phe Ile Lys Lys Cys Gln Asp 1315 1320 1325 Met Val Met Ala Glu Leu Val Asn Ser Gly Glu Asp Val Leu Val Phe 1330 1335 1340 Tyr Asn Asp Arg Ala Ser Phe Gln Thr Leu Ile Gln Met Met Arg Ser 1345 1350 1355 Glu Arg Asp Arg Met Asp Glu Asn Ser Pro Leu Phe Met Tyr His Ile 1365 1370 1375 His Leu Val Glu Leu Leu Ala Val Cys Thr Glu Gly Lys Asn Val Tyr 1380 1385 1390 Thr Glu Ile Lys Cys Asn Ser Leu Leu Pro Leu Asp Asp Ile Val Arg 1395 1400 1405 Val Val Thr His Glu Asp Cys Ile Pro Glu Val Lys Ile Ala Tyr Ile 1410 1415 1420 Asn Phe Leu Asn His Cys Tyr Val Asp Thr Glu Val Glu Met Lys Glu 1425 1430 1435 1440 Ile Tyr Thr Ser Asn His Met Trp Lys Leu Phe Glu Asn Phe Leu Val 1445 1450 1455 Asp Ile Cys Arg Ala Cys Asn Asn Thr Ser Asp Arg Lys His Ala Asp 1460 1465 1470 Ser Val Leu Glu Lys Tyr Val Thr Glu Ile Val Met Ser Ile Val Thr 1475 1480 1485 Thr Phe Phe Ser Ser Pro Phe Ser Asp Gln Ser Thr Thr Leu Gln Thr 1490 1495 1500 Arg Gln Pro Val Phe Val Gln Leu Gln Gly Val Phe Arg Val Tyr 1505 1510 1515 1520 His Cys Asn Trp Leu Met Pro Ser Gln Lys Ala Ser Val Glu Ser Cys 1525 1530 1535 Ile Arg Val Leu Ser Asp Val Ala Lys Ser Arg Ala Ile Ala Ile Pro 1540 1545 1550 Val Asp Leu Asp Ser Gln Val Asn Asn Leu Phe Leu Lys Ser His Asn 1555 1560 1565 Ile Val Gln Lys Thr Ala Met Asn Trp Arg Leu Ser Ala Arg Asn Ala 1575 1580

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Ala Arg Arg Asp Ser Val Leu Ala Ala Ser Arg Asp Tyr Arg Asn Ile 1590 1595 Ile Glu Arg Leu Gln Asp Ile Val Ser Ala Leu Glu Asp Arg Leu Arg 1605 1610 Pro Leu Val Gln Ala Glu Leu Ser Val Leu Val Asp Val Leu His Arg 1620 1625 Pro Glu Leu Leu Phe Pro Glu Asn Thr Asp Ala Arg Arg Lys Cys Glu 1635 1640 1645 Ser Gly Gly Phe Ile Cys Lys Leu Ile Lys His Thr Lys Gln Leu Leu 1655 1660 Glu Glu Asn Glu Glu Lys Leu Cys Ile Lys Val Leu Gln Thr Leu Arg 1670 1675 Glu Met Met Thr Lys Asp Arg Gly Tyr Gly Glu Lys Gln Ile Ser Ile 1685 1690 Asp Glu Leu Glu Asn Ala Glu Leu Pro Gln Pro Pro Glu Ala Glu Asn 1705 Ser Thr Glu Glu Leu Glu Pro Ser Pro Pro Leu Arg Gln Leu Glu Asp 1720 1725 His Lys Arg Gly Glu Ala Leu Arg Gln Ile Leu Val Asn Arg Tyr Tyr 1730 1735 1740 Gly Asn Ile Arg Pro Ser Gly Arg Arg Glu Ser Leu Thr Ser Phe Gly 1750 1755 Asn Gly Pro Leu Ser Pro Gly Gly Pro Ser Lys Pro Gly Gly Gly 1765 1770 1775 Gly Gly Pro Gly Ser Gly Ser Thr Ser Arg Gly Glu Met Ser Leu Ala 1780 1785 1790 Glu Val Gln Cys His Leu Asp Lys Glu Gly Ala Ser Asn Leu Val Ile 1795 1800 1805 Asp Leu Ile Met Asn Ala Ser Ser Asp Arg Val Phe His Glu Ser Ile 1820 1810 1815 Leu Leu Ala Ile Ala Leu Leu Glu Gly Gly Asn Thr Thr Ile Gln His 1825 1830 1835 Ser Phe Phe Cys Arg Leu Thr Glu Asp Lys Lys Ser Glu Lys Phe Phe 1845 1850 1855 Lys Val Phe Tyr Asp Arg Met Lys Val Ala Gln Glu Ile Lys Ala 1860 1865 1870 Thr Val Thr Val Asn Thr Ser Asp Leu Gly Asn Lys Lys Asp Asp 1875 1880 1885 Glu Val Asp Arg Asp Ala Pro Ser Arg Lys Lys Ala Lys Glu Pro Thr 1895 1900 Thr Gln Ile Thr Glu Glu Val Arg Asp Gln Leu Leu Glu Ala Ser Ala 1910 1915 Ala Thr Arg Lys Ala Phe Thr Thr Phe Arg Arg Glu Ala Asp Pro Asp 1925 1930 1935 Asp His Tyr Gln Ser Gly Glu Gly Thr Gln Ala Thr Thr Asp Lys Ala 1940 1945 1950 Lys Asp Asp Leu Glu Met Ser Ala Val Ile Thr Ile Met Gln Pro Ile 1955 1960 1965 Leu Arg Phe Leu Gln Leu Leu Cys Glu Asn His Asn Arg Asp Leu Gln 1970 1975 1980 Asn Phe Leu Arg Cys Gln Asn Asn Lys Thr Asn Tyr Asn Leu Val Cys 1985 1990 1995 Glu Thr Leu Gln Phe Leu Asp Cys Ile Cys Gly Ser Thr Thr Gly Gly 2010 2015 2005 Leu Gly Leu Leu Gly Leu Tyr Ile Asn Glu Lys Asn Val Ala Leu Ile 2020 2025 2030 Asn Gln Thr Leu Glu Ser Leu Thr Glu Tyr Cys Gln Gly Pro Cys His 2040 Glu Asn Gln Asn Cys Ile Ala Thr His Glu Ser Asn Gly Ile Asp Ile 2055

$\begin{array}{c} \mathbf{WO} \ 2005/072347 \\ \mathbf{FL} \ \mathbf{F} \ \mathbf{FL} \ \mathbf{G} \ \mathbf{G} \ \mathbf{G} \ \mathbf{G} \ \mathbf{G} \ \mathbf{G} \end{array}$

Ile Thr Ala Leu Ile Leu Asn Asp Ile Asn Pro Leu Gly Lys Lys Arg 2070 2075 Met Asp Leu Val Leu Glu Leu Lys Asn Ala Ser Lys Leu Leu Leu 2085 2090 Ala Ile Met Glu Ser Arg His Asp Ser Glu Asn Ala Glu Arg Ile Leu 2100 2105 Tyr Asn Met Arg Pro Lys Glu Leu Val Glu Val Ile Lys Lys Ala Tyr 2120 2125 Met Gln Gly Glu Val Glu Phe Glu Asp Gly Glu Asn Gly Glu Asp Gly 2135 2140 Ala Ala Ser Pro Arg Asn Val Gly His Asn Ile Tyr Ile Leu Ala His 2150 2155 Gln Leu Ala Arg His Asn Lys Glu Leu Gln Thr Met Leu Lys Pro Gly 2165 2170 Gly Gln Val Asp Gly Asp Glu Ala Leu Glu Phe Tyr Ala Lys His Thr 2185 2190 Ala Gln Ile Glu Ile Val Arg Leu Asp Arg Thr Met Glu Gln Ile Val 2195 2200 Phe Pro Val Pro Ser Ile Cys Glu Phe Leu Thr Lys Glu Ser Lys Leu 2220 2215 Arg Ile Tyr Tyr Thr Thr Glu Arg Asp Glu Gln Gly Ser Lys Ile Asn 2230 2235 Asp Phe Phe Leu Arg Ser Glu Asp Leu Phe Asn Glu Met Asn Trp Gln 2245 2250 . 2255 Lys Lys Leu Arg Ala Gln Pro Val Leu Tyr Trp Cys Ala Arg Asn Met 2260 2265 2270 Ser Phe Trp Ser Ser Ile Ser Phe Asn Leu Ala Val Leu Met Asn Leu 2275 2280 2285 Leu Val Ala Phe Phe Tyr Pro Phe Lys Gly Val Arg Gly Gly Thr Leu 2290 2295 2300 Glu Pro His Trp Ser Gly Leu Leu Trp Thr Ala Met Leu Ile Ser Leu 2305 2310 2315 Ala Ile Val Ile Ala Leu Pro Lys Pro His Gly Ile Arg Ala Leu Ile 2325 2330 2335 Ala Ser Thr Ile Leu Arg Leu Ile Phe Ser Val Gly Leu Gln Pro Thr 2340 2345 2350 Leu Phe Leu Gly Ala Phe Asn Val Cys Asn Lys Ile Ile Phe Leu 2355 2360 2365 Met Ser Phe Val Gly Asn Cys Gly Thr Phe Thr Arg Gly Tyr Arg Ala 2370 2375 2380 Met Val Leu Asp Val Glu Phe Leu Tyr His Leu Leu Tyr Leu Leu Ile 2390 2395 Cys Ala Met Gly Leu Phe Val His Glu Phe Phe Tyr Ser Leu Leu 2405 2410 2415 Phe Asp Leu Val Tyr Arg Glu Glu Thr Leu Leu Asn Val Ile Lys Ser 2420 2425 2430 Val Thr Arg Asn Gly Arg Pro Ile Ile Leu Thr Ala Ala Leu Ala Leu 2435 2440 2445 Ile Leu Val Tyr Leu Phe Ser Ile Val Gly Tyr Leu Phe Phe Lys Asp 2450 2455 2460 Asp Phe Ile Leu Glu Val Asp Arg Leu Pro Asn Glu Thr Ala Gly Pro 2470 2475 Glu Thr Gly Glu Ser Leu Ala Asn Asp Phe Leu Tyr Ser Asp Val Cys 2485 2490 2495 Arg Val Glu Thr Gly Glu Asn Cys Thr Ser Pro Ala Pro Lys Glu Glu 2500 2505 2510 Leu Leu Pro Val Glu Glu Thr Glu Gln Asp Lys Glu His Thr Cys Glu 2520 2525 Thr Leu Leu Met Cys Ile Val Thr Val Leu Ser His Gly Leu Arg Ser 2535

Gly Gly Val Gly Asp Val Leu Arg Lys Pro Ser Lys Glu Glu Pro 2555 2550 Leu Phe Ala Ala Arq Val Ile Tyr Asp Leu Leu Phe Phe Met Val 2565 2570 Ile Ile Ile Val Leu Asn Leu Ile Phe Gly Val Ile Ile Asp Thr Phe 2580 2585 Ala Asp Leu Arg Ser Glu Lys Gln Lys Lys Glu Glu Ile Leu Lys Thr 2600 Thr Cys Phe Ile Cys Gly Leu Glu Arg Asp Lys Phe Asp Asn Lys Thr 2615 2620 Val Thr Phe Glu Glu His Ile Lys Glu Glu His Asn Met Trp His Tyr 2635 2630 Leu Cys Phe Ile Val Leu Val Lys Val Lys Asp Ser Thr Glu Tyr Thr 2650 2655 2645 Gly Pro Glu Ser Tyr Val Ala Glu Met Ile Arg Glu Arg Asn Leu Asp 2670 2660 2665 Trp Phe Pro Arg Met Arg Ala Met Ser Leu Val Ser Ser Asp Ser Glu 2685 2680 Gly Glu Gln Asn Glu Leu Arg Asn Leu Gln Glu Lys Leu Glu Ser Thr 2695 2700 Met Lys Leu Val Thr Asn Leu Ser Gly Gln Leu Ser Glu Leu Lys Asp 2710 2715 Gln Met Thr Glu Gln Arg Lys Gln Lys Gln Arg Ile Gly Leu Leu Gly 2730 His Pro Pro His Met Asn Val Asn Pro Gln Gln Pro Ala 2740 2745

<210> 19

<211> 2701

<212> PRT

<213> Artificial Sequence

<220>

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Val Val Gly Asp Lys Val Val Leu Met Pro Val Asn Ala Gly Gln Pro 185 Leu His Ala Ser Asn Val Glu Leu Leu Asp Asn Pro Gly Cys Lys Glu 200 Val Asn Ala Val Asn Cys Asn Thr Ser Trp Lys Ile Thr Leu Phe Met 220 215 Lys Phe Ser Ser Tyr Arg Glu Asp Val Leu Lys Gly Gly Asp Val Val 230 235 Arg Leu Phe His Ala Glu Gln Glu Lys Phe Leu Thr Cys Asp Asp Tyr 245 250 Glu Lys Lys Gln His Ile Phe Leu Arg Thr Thr Leu Arg Gln Ser Ala 265 Thr Ser Ala Thr Ser Ser Lys Ala Leu Trp Glu Ile Glu Val Val His 280 His Asp Pro Cys Arg Gly Gly Ala Gly Gln Trp Asn Ser Leu Phe Arg 295 Phe Lys His Leu Ala Thr Gly Asn Tyr Leu Ala Ala Glu Leu Asn Pro 310 315 Asp Tyr Arg Asp Ala Gln Asn Glu Gly Lys Thr Val Arg Asp Gly Glu 330 Leu Pro Thr Ser Lys Lys His Gln Ala Gly Glu Lys Ile Met Tyr 345 Thr Leu Val Ser Val Pro His Gly Asn Asp Ile Ala Ser Leu Phe Glu 360 Leu Asp Ala Thr Thr Leu Gln Arg Ala Asp Cys Leu Val Pro Arg Asn 375 380 Ser Tyr Val Arg Leu Arg His Leu Cys Thr Asn Thr Trp Val Thr Ser 390 395 Thr Ser Ile Pro Ile Asp Thr Glu Glu Arg Pro Val Met Leu Lys 405 410 Ile Gly Thr Cys Gln Thr Lys Glu Asp Lys Glu Ala Phe Ala Ile Val 420 425 Cys Val Pro Leu Ser Glu Val Arg Asp Leu Asp Phe Ala Asn Asp Ala 440 Asn Lys Val Leu Ala Thr Thr Val Lys Lys Leu Glu Asn Gly Ser Ile 455 Thr Gln Asn Glu Arg Arg Phe Val Thr Lys Leu Leu Glu Asp Leu Ile 470 475 Phe Phe Val Ala Asp Val Thr Asn Asn Gly Gln Asp Val Leu Asp Val 485 490 Val Ile Thr Lys Pro Asn Arg Glu Arg Gln Lys Leu Met Arg Glu Gln 505 Asn Ile Leu Ala Gln Val Phe Gly Ile Leu Lys Ala Pro Phe Lys Glu 520 Lys Ala Gly Glu Gly Ser Met Leu Arg Leu Glu Asp Leu Gly Asp Gln 535 540 Arg Tyr Ala Pro Tyr Lys Tyr Val Leu Arg Leu Cys Tyr Arg Val Leu 550 555 Arg His Ser Gln Gln Asp Tyr Arg Lys Asn Gln Glu Tyr Ile Ala Lys 570 565 Asn Phe Cys Val Met Gln Ser Gln Ile Gly Tyr Asp Ile Leu Ala Glu 580 585 Asp Thr Ile Thr Ala Leu Leu His Asn Asn Arg Lys Leu Leu Glu Lys 600 605 His Ile Thr Ala Lys Glu Ile Glu Thr Phe Val Ser Leu Leu Arg Arg 615 Asn Arg Glu Pro Arg Phe Leu Asp Tyr Leu Ser Asp Leu Cys Val Ser 635 Asn Ser Thr Ala Ile Pro Val Thr Gln Glu Leu Ile Cys Lys Phe Met

Leu Ser Pro Gly Asn Ala Asp Ile Leu Ile Gln Thr Lys Leu Val Ser 665 Met Gln Val Glu Asn Pro Met Glu Ser Ser Ile Leu Pro Asp Asp Ile 680 Asp Asp Glu Glu Val Trp Leu Tyr Trp Ile Asp Ser Asn Lys Glu Pro 695 His Gly Lys Ala Ile Arg His Leu Ala Gln Glu Ala Arg Glu Gly Thr 710 715 Lys Ala Asp Leu Glu Val Leu Thr Tyr Tyr Arg Tyr Gln Leu Asn Leu 725 730 Phe Ala Arg Met Cys Leu Asp Arg Gln Tyr Leu Ala Ile Asn Gln Ile 745 Ser Thr Gln Leu Ser Val Asp Leu Ile Leu Arg Cys Val Ser Asp Glu 760 765 Ser Leu Pro Phe Asp Leu Arg Ala Ser Phe Cys Arg Leu Met Leu His 775 780 Met His Val Asp Arg Asp Pro Gln Glu Ser Val Val Pro Val Arg Tyr 790 795 Ala Arq Leu Trp Thr Glu Ile Pro Thr Lys Ile Thr Ile His Glu Tyr 810 Asp Ser Ile Thr Asp Ser Ser Arg Asn Asp Met Lys Arg Lys Phe Ala 825 Leu Thr Met Glu Phe Val Glu Glu Tyr Leu Lys Glu Val Val Asn Gln 840 Pro Phe Pro Phe Gly Asp Lys Glu Lys Asn Lys Leu Thr Phe Glu Val 855 Val His Leu Ala Arg Asn Leu Ile Tyr Phe Gly Phe Tyr Ser Phe Ser 870 875 Glu Leu Leu Arg Leu Thr Arg Thr Leu Leu Ala Ile Leu Asp Ile Val 885 890 Gln Ala Pro Met Ser Ser Tyr Phe Glu Arg Leu Ser Lys Phe Gln Asp 900 905 Gly Ser Asn Asn Val Met Arg Thr Ile His Gly Val Gly Glu Met Met 920 915 925 Thr Gln Met Val Leu Ser Arg Gly Ser Ile Phe Pro Val Ser Trp Pro 930 935 940 Asp Ala Gln Pro Ser Val His Pro Ser Lys Gln Ala Ser Pro Gly Glu 950 955 Gln Glu Asp Val Thr Val Met Asp Thr Lys Leu Lys Val Ile Glu Ile 965 970 Leu Gln Phe Ile Leu Ser Val Arg Leu Asp Tyr Arg Ile Ser Tyr Met 980 985 Leu Ser Ile Tyr Lys Lys Glu Phe Gly Glu Asn Asp Gly Asn Gly Asp 1000 Pro Ser Ala Ser Gly Thr Pro Glu Thr Leu Leu Pro Ser Ala Leu Val 1015 1020 Pro Asp Ile Asp Glu Ile Ala Ala Gln Ala Glu Thr Met Phe Ala Gly 1025 1030 1035 Arg Lys Glu Lys Thr Pro Val Gln Leu Asp Asp Glu Gly Gly Arg Thr 1045 1050 Phe Leu Arg Val Leu Ile His Leu Ile Met His Asp Tyr Ala Pro Leu 1060 1065 1070 Leu Ser Gly Ala Leu Gln Leu Leu Phe Lys His Phe Ser Gln Arg Ala 1085 1075 1080 Glu Val Leu Gln Ala Phe Lys Gln Val Gln Leu Leu Val Ser Asn Gln 1090 1095 1100 Asp Val Asp Asn Tyr Lys Gln Ile Lys Ala Asp Leu Asp Gln Leu Arg 1105 1110 1115 1120 Leu Thr Val Glu Lys Ser Glu Leu Trp Val Glu Lys Ser Gly Ser Tyr 1125 1130

Glu Asn Gly Asp Met Gly Glu Gly Gln Ala Lys Gly Gly Glu Glu Ala 1145 Asn Glu Glu Ser Asn Leu Leu Ser Pro Val Gln Asp Gly Ala Lys Thr 1155 1160 1165 Pro Gln Ile Asp Ser Asn Lys Gly Asn Asn Tyr Arg Ile Val Lys Glu 1175 1180 Ile Leu Ile Arg Leu Ser Lys Leu Cys Val Gln Asn Lys Lys Cys Arg 1190 1195 1200 Asn Gln His Gln Arg Leu Leu Lys Asn Met Gly Ala His Ser Val Val 1205 1210 1215 Leu Asp Leu Leu Gln Ile Pro Tyr Glu Lys Thr Asp Glu Lys Met Asn 1220 1225 1230 Glu Val Met Asp Leu Ala His Thr Phe Leu Gln Asn Phe Cys Arg Gly 1235 1240 1245 Asn Pro Gln Asn Gln Val Leu Leu His Lys His Leu Asn Leu Phe Leu 1255 1260 Thr Pro Gly Leu Leu Glu Ala Glu Thr Met Arg His Ile Phe Met Asn 1270 1275 Asn Tyr His Leu Cys Asn Glu Ile Ser Glu Arg Val Val Gln His Phe 1290 1295 1285 Val His Cys Ile Glu Thr His Gly Arg His Val Glu Tyr Leu Arg Phe 1300 1305 Leu Gln Thr Ile Val Lys Ala Asp Gly Lys Tyr Val Lys Lys Cys Gln 1315 1320 Asp Met Val Met Thr Glu Leu Ile Asn Gly Gly Glu Asp Val Leu Ile 1330 1335 1340 Phe Tyr Asn Asp Arg Ala Ser Phe Pro Ile Leu Leu Asn Met Met Cys 1345 1350 1355 Ser Glu Arg Ala Arg Gly Asp Glu Ser Gly Pro Leu Ala Tyr His Ile 1365 1370 1375 Thr Leu Val Glu Leu Leu Ala Ala Cys Thr Glu Gly Lys Asn Val Tyr 1380 1385 Thr Glu Ile Lys Cys Asn Ser Leu Leu Pro Leu Asp Asp Ile Val Arg 1395 1400 1405 Val Val Thr His Asp Asp Cys Ile Pro Glu Val Lys Ile Ala Tyr Val 1410 1415 1420 Asn Phe Val Asn His Cys Tyr Val Asp Thr Glu Val Glu Met Lys Glu 1425 1430 1435 1440 Ile Tyr Thr Ser Asn His Ile Trp Lys Leu Phe Glu Asn Phe Leu Val 1445 1450 1455 Asp Met Ala Arg Val Cys Asn Thr Thr Asp Arg Lys His Ala Asp 1460 1465 1470 Thr Phe Leu Glu Arg Cys Val Thr Glu Ser Val Met Asn Ile Val Ser 1475 1480 1485 Gly Phe Phe Asn Ser Pro Phe Ser Asp Asn Ser Thr Ser Leu Gln Thr 1500 1490 1495 His Gln Pro Val Phe Ile Gln Leu Gln Ser Ala Phe Arg Ile Tyr 1505 1510 1515 1520 Asn Cys Thr Trp Pro Asn Pro Ala Gln Lys Ala Ser Val Glu Ser Cys 1525 1530 1535 Ile Arg Ala Leu Ala Glu Val Ala Lys Asn Arg Gly Ile Ala Ile Pro 1540 1545 Val Asp Leu Asp Ser Gln Val Asn Thr Leu Phe Met Lys Asn His Ser 1555 1560 1565 Ser Thr Val Gln Arg Ala Ala Met Gly Trp Arg Leu Ser Ala Arg Ser 1570 1575 1580 Gly Pro Arg Phe Lys Glu Ala Leu Gly Gly Pro Ala Trp Asp Tyr Arg 1585 1590 1595 1600 Asn Ile Ile Glu Lys Leu Gln Asp Val Val Ala Ser Leu Glu Gln Gln 1605 1610

Phe Ser Pro Met Met Gln Ala Glu Phe Ser Val Leu Val Asp Val Leu 1625 Tyr Ser Pro Glu Leu Leu Phe Pro Glu Gly Ser Asp Ala Arg Ile Arg 1635 1640 Cys Gly Ala Phe Met Ser Lys Leu Ile Asn His Thr Lys Lys Leu Met 1655 1660 Glu Lys Glu Glu Lys Leu Cys Ile Lys Ile Leu Gln Thr Leu Arg Glu 1675 1670 Met Leu Glu Lys Lys Asp Ser Phe Met Glu Glu Ser Ser Thr Leu Arg 1685 1690 1695 Lys Ile Leu Leu Asn Arg Tyr Phe Lys Gly Asp His Ser Val Gly Val 1700 1705 1710 Asn Gly Pro Leu Ser Gly Ala Tyr Ala Lys Thr Ala Gln Val Gly Gly 1720 1725 Gly Phe Thr Gly Gln Asp Ala Asp Lys Thr Gly Ile Ser Met Ser Asp 1735 1740 Ile Gln Cys Leu Leu Asp Lys Glu Gly Ala Ser Glu Leu Val Ile Asp 1750 1755 Val Ile Val Asn Thr Lys Asn Asp Arg Ile Phe Ser Glu Gly Ile Leu 1765 1770 Leu Gly Ile Ala Leu Leu Glu Gly Gly Asn Thr Gln Thr Gln Asn Ser 1780 1785 1790 Phe Tyr Gln Gln Leu His Glu Gln Lys Lys Ser Glu Lys Phe Phe Lys 1795 1800 Val Leu Tyr Asp Arg Met Lys Ala Ala Gln Lys Glu Ile Arg Ser Thr 1810 1815 1820 Val Thr Val Asn Thr Ile Asp Leu Gly Ser Lys Lys Arg Glu Glu Asp 1825 1830 1835 Ser Asp Leu Met Ala Leu Gly Pro Arg Met Arg Val Arg Asp Ser Ser 1845 1850 Leu His Leu Lys Glu Gly Met Lys Gly Gln Leu Thr Glu Ala Ser Ser 1860 1865 1870 Ala Thr Ser Lys Ala Tyr Cys Val Tyr Arg Arg Glu Met Asp Pro Asp 1875 1880 1885 Ile Asp Thr Met Cys Pro Gly Gln Glu Ala Gly Ser Ala Glu Glu Lys 1890 1895 1900 Ser Ala Glu Glu Val Thr Met Ser Pro Ala Ile Thr Ile Met Arg Pro 1905 1910 1915 Ile Leu Arg Phe Leu Gln Leu Leu Cys Glu Asn His Asn Arg Glu Leu 1925 1930 1935 Gln Asn Phe Leu Arg Asn Gln Asn Asn Lys Thr Asn Tyr Asn Leu Val 1940 1945 1950 Cys Glu Thr Leu Gln Phe Leu Asp Cys Ile Cys Gly Ser Thr Thr Gly 1955 1960 1965 Gly Leu Gly Leu Gly Leu Tyr Ile Asn Glu Lys Asn Val Ala Leu 1970 1975 1980 Val Asn Gln Thr Leu Glu Ser Leu Thr Glu Tyr Cys Gln Gly Pro Cys 1985 1990 1995 His Glu Asn Gln Thr Cys Ile Ala Thr His Glu Ser Asn Gly Ile Asp 2005 2010 2015 Ile Ile Ile Ala Leu Ile Leu Ser Asp Ile Asn Pro Leu Gly Lys Tyr 2020 2025 2030 Arg Met Asp Leu Val Leu Gln Leu Lys Asn Asn Ala Ser Lys Leu Leu 2035 2040 2045 Leu Ala Ile Met Glu Ser Arg His Asp Ser Glu Asn Ala Glu Arg Ile 2050 2055 2060 Leu Phe Asn Met Arg Pro Lys Glu Leu Val Asp Val Met Lys Asn Ala 2065 2070 2075 Tyr Asn Gln Gly Leu Glu Cys Asn His Gly Asp Glu Glu Gly Gly Asp 2085 2090

Asp Gly Val Ser Pro Lys Asp Val Gly His Asn Ile Tyr Ile Leu Ala 2105 His Gln Leu Ala Arq His Asn Lys Leu Leu Gln Gln Met Leu Lys Pro 2115 2120 Gly Ser Asp Pro Glu Glu Gly Asp Glu Ala Leu Lys Tyr Tyr Ala Asn 2135 2140 His Thr Ala Gln Ile Glu Ile Val Arg His Asp Arg Thr Met Glu Gln 2150 2155 Ile Val Phe Pro Val Pro Asn Ile Cys Glu Phe Leu Thr Arg Glu Ser 2165 2170 Lys Tyr Arg Val Phe Asn Thr Thr Glu Arg Asp Glu Gln Gly Ser Lys 2180 2185 2190 Val Asn Asp Phe Phe Gln Gln Thr Glu Asp Leu Tyr Asn Glu Met Lys 2195 2200 2205 Trp Gln Lys Lys Ile Arg Asn Asn Pro Ala Leu Phe Trp Phe Ser Arg 2210 2215 2220 His Ile Ser Leu Trp Gly Ser Ile Ser Phe Asn Leu Ala Val Phe Ile 2230 2235 2240 Asn Leu Ala Val Ala Leu Phe Tyr Pro Phe Gly Asp Asp Gly Asp Glu 2245 2250 2255 Gly Thr Leu Ser Pro Leu Phe Ser Ala Leu Leu Trp Val Ala Val Ala 2260 2265 Ile Cys Thr Ser Met Leu Phe Phe Phe Ser Lys Pro Val Gly Ile Arg 2275 2280 2285 Pro Phe Leu Val Ser Ile Met Leu Arg Ser Ile Tyr Thr Ile Gly Leu 2290 2295 2300 Gly Pro Thr Leu Ile Leu Leu Gly Ala Ala Asn Leu Cys Asn Lys Ile 2305 2310 2315 2320 Val Phe Leu Val Ser Phe Val Gly Asn Arg Gly Thr Phe Thr Arg Gly 2325 2330 2335 Tyr Arg Ala Val Ile Leu Asp Met Ala Phe Leu Tyr His Val Ala Tyr 2340 2345 2350 Val Leu Val Cys Met Leu Gly Leu Phe Val His Glu Phe Phe Tyr Ser 2355 2360 2365 Phe Leu Leu Phe Asp Leu Val Tyr Arg Glu Glu Thr Leu Leu Asn Val 2370 2375 2380 Ile Lys Ser Val Thr Arg Asn Gly Arg Ser Ile Ile Leu Thr Ala Val 2385 2390 2395 2400 Leu Ala Leu Ile Leu Val Tyr Leu Phe Ser Ile Ile Gly Phe Leu Phe 2405 2410 2415 Leu Lys Asp Asp Phe Thr Met Glu Val Asp Arg Leu Lys Asn Arg Thr 2420 2425 2430 Pro Val Thr Gly Asn Asp Gly Val Pro Thr Met Thr Leu Thr Ser Met 2435 2440 2445 Leu Gly Thr Cys Pro Lys Glu Asn Cys Ser Pro Thr Ile Pro Ser Ser 2455 2460 Asn Ala Ala Gly Glu Gly Glu Asp Gly Ile Glu Arg Thr Cys Asp **2465 2470 2475 2480** Thr Leu Leu Met Cys Ile Val Thr Val Leu Asn Gln Gly Leu Arg Asn 2485 2490 2495 Gly Gly Val Gly Asp Val Leu Arg Arg Pro Ser Lys Asp Glu Pro 2500 2505 2510 Leu Phe Ala Ala Arg Val Val Tyr Asp Leu Leu Phe Phe Ile Val 2515 2520 2525 Ile Ile Ile Val Leu Asn Leu Ile Phe Gly Val Ile Ile Asp Thr Phe 2530 2535 2540 Ala Asp Leu Arg Ser Glu Lys Gln Lys Lys Glu Lys Ile Leu Lys Thr 2545 2550 2555 2560 Thr Cys Phe Ile Cys Gly Leu Glu Arg Asp Lys Phe Asp Asn Lys Thr 2565 2570

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Val Ser Phe Glu Glu His Ile Lys Ser Glu His Asn Met Trp His Tyr 2580 2585 Leu Tyr Phe Ile Val Leu Val Lys Val Lys Asp Pro Thr Glu Tyr Thr 2595 2600 Gly Pro Glu Ser Tyr Val Ala Gln Met Ile Thr Glu Lys Asn Leu Asp 2615 2620 Trp Phe Pro Arg Met Arg Ala Met Ser Leu Val Ser Asn Glu Gly Asp 2635 2630 Ser Glu Gln Asn Glu Ile Arg Asn Leu Gln Glu Lys Leu Glu Ser Thr 2645 2650 Met Ser Leu Val Lys Gln Leu Ser Gly Gln Leu Ala Glu Leu Lys Glu 2665 Gln Met Thr Glu Gln Arg Lys Asn Lys Gln Arg Leu Gly Phe Leu Gly 2680 Ser Asn Thr Pro His Glu Asn His His Met Pro Pro His 2695

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250

Tyr Arg Gly Lys Leu Gln Val Phe Leu Arg Thr Thr Leu Arg Gln Ser Ala Thr Ser Ala Thr Ser Ser Asn Ala Leu Trp Glu Val Glu Val Val His His Asp Pro Cys Arg Gly Gly Ala Gly His Trp Asn Gly Leu Tyr Arg Phe Lys His Leu Ala Thr Gly Asn Tyr Leu Ala Ala Glu Glu Asn Pro Ser Tyr Lys Gly Asp Val Ser Asp Pro Lys Ala Ala Gly Pro Gly Ala Gln Ser Arg Thr Gly Arg Arg Asn Ala Gly Glu Lys Ile Lys Tyr Arg Leu Val Ala Val Pro His Gly Asn Asp Ile Ala Ser Leu Phe Glu Leu Asp Pro Thr Thr Leu Gln Lys Thr Asp Ser Phe Val Pro Arg Asn Ser Tyr Val Arg Leu Arg His Leu Cys Thr Asn Thr Trp Ile Gln Ser Thr Asn Ala Pro Ile Asp Val Glu Glu Glu Arg Pro Ile Arg Leu Met Leu Gly Thr Cys Pro Thr Lys Glu Asp Lys Glu Ala Phe Ala Ile Val Ser Val Pro Val Ser Glu Ile Arg Asp Leu Asp Phe Ala Asn Asp Ala Ser Ser Met Leu Ala Ser Ala Val Glu Lys Leu Asn Glu Gly Phe Ile Ser Gln Asn Asp Arg Arg Phe Val Ile Gln Leu Leu Glu Asp Leu Val Phe Phe Val Ser Asp Val Pro Asn Asn Gly Gln Asn Val Leu Asp Ile Met Val Thr Lys Pro Asn Arg Glu Arg Gln Lys Leu Met Arg Asp Glu Asn Ile Leu Lys Gln Ile Phe Gly Ile Leu Lys Ala Pro Phe Arg Asp Lys Gly Gly Glu Gly Pro Leu Val Arg Leu Glu Glu Leu Ser Asp Gln Lys Asn Ala Pro Tyr Gln Tyr Met Phe Arg Leu Cys Tyr Arg Val Leu Arg His Ser Gln Glu Asp Tyr Arg Lys Asn Gln Glu His Ile Ala Lys Gln Phe Gly Met Met Gln Ser Gln Ile Gly Tyr Asp Ile Leu Ala Glu Asp Thr Ile Thr Ala Leu Leu His Asn Asn Arg Lys Leu Leu Glu Lys His Ile Thr Lys Thr Glu Val Glu Thr Phe Val Ser Leu Val Arg Lys Asn Arg Glu Pro Arg Phe Leu Asp Tyr Leu Ser Asp Leu Cys Val Ser Asn Arg Ile Ala Ile Pro Val Thr Gln Glu Leu Ile Cys Lys Cys Val Leu Asp Pro Lys Asn Ser Asp Ile Leu Ile Gln Thr Glu Leu Arg Pro Val Lys Glu Met Ala Gln Ser His Glu Tyr Leu Ser Ile Glu Tyr Ser Glu Glu Glu Val Trp Leu Thr Trp Thr Asp Arg Asn Asn Glu His His Glu Lys Ser Val Arg Gln Leu Ala Gln Glu Ala Arg Ala Gly Asn Ala His Asp Glu Asn Val Leu Ser Tyr Tyr Arg Tyr Gln Leu Lys Leu Phe

Ala Arg Met Cys Leu Asp Arg Gln Tyr Leu Ala Ile Asp Glu Ile Ser 745 Lys Gln Leu Gly Val Glu Leu Leu Phe Leu Cys Met Ala Asp Glu Met 760 Leu Pro Phe Asp Leu Arg Ala Ser Phe Cys His Leu Met Leu His Val 775 780 His Val Asp Arg Asp Pro Gln Glu Leu Val Thr Pro Val Lys Phe Ala 795 790 Arg Leu Trp Thr Glu Ile Pro Thr Ala Ile Thr Ile Lys Asp Tyr Asp 805 810 Ser Asn Leu Asn Ala Ser Arg Asp Asp Lys Lys Asn Lys Phe Ala Ser 825 Thr Met Glu Phe Val Glu Asp Tyr Leu Asn Asn Val Val Gly Glu Ala 840 Val Pro Phe Ala Asn Asp Glu Lys Asn Ile Leu Thr Phe Glu Val Val 855 Ser Leu Ala His Asn Leu Ile Tyr Phe Gly Phe Tyr Ser Phe Ser Glu 870 875 Leu Leu Arg Leu Thr Arg Thr Leu Leu Gly Ile Ile Asp Cys Ile Gln 885 890 Ala Pro Ala Ala Val Leu Gln Ala Tyr Glu Glu Pro Gly Gly Lys Asn 905 Val Arg Arg Ser Ile Gln Gly Val Gly His Met Met Ser Thr Met Val 920 Leu Ser Arg Lys Gln Ser Val Phe Gly Ala Ser Ser Leu Pro Thr Gly 935 940 Val Gly Val Pro Glu Gln Leu Asp Arg Ser Lys Phe Glu Asp Asn Glu 950 955 His Thr Val Val Met Glu Thr Lys Leu Lys Ile Leu Glu Ile Leu Gln 965 970 Phe Ile Leu Asn Val Arg Leu Asp Tyr Arg Ile Ser Tyr Leu Leu Ser 980 985 Val Phe Lys Lys Glu Phe Val Glu Val Phe Pro Met Gln Asp Ser Gly 1000 1005 Ala Asp Gly Thr Ala Pro Ala Phe Asp Ser Ser Thr Ala Asn Met Asn 1020 1015 Leu Asp Arg Ile Gly Glu Gln Ala Glu Ala Met Phe Gly Val Gly Lys 1035 1025 1030 Thr Ser Ser Met Leu Glu Val Asp Asp Glu Gly Gly Arg Met Phe Leu 1045 1050 1055 Arg Val Leu Leu His Leu Thr Met His Asp Tyr Pro Pro Leu Val Ser 1060 1065 Gly Ala Leu Gln Leu Leu Phe Lys His Phe Ser Gln Arg Gln Glu Ala 1075 1080 1085 Met His Thr Phe Lys Gln Val Gln Leu Leu Ile Ser Ala Gln Asp Val 1100 1090 1095 Glu Asn Tyr Lys Val Ile Lys Ser Glu Leu Asp Arg Leu Arg Thr Met 1110 1115 Val Glu Lys Ser Glu Leu Trp Val Asp Lys Lys Gly Ser Val Lys Gly 1125 1130 1135 Glu Glu Gly Glu Ala Gly Ala Ser Lys Asp Lys Lys Glu Arg Pro Ser 1140 1145 1150 Asp Glu Glu Gly Phe Leu Gln Pro His Gly Glu Lys Ser Ser Glu Asn 1155 1160 1165 Tyr Gln Ile Val Lys Gly Ile Leu Glu Arg Leu Asn Lys Met Cys Gly 1170 1175 1180 Val Gly Glu Gln Met Arg Lys Lys Gln Gln Arg Leu Leu Lys Asn Met 1190 1195 1200 Asp Ala His Lys Val Met Leu Asp Leu Leu Gln Ile Pro Tyr Asp Lys 1210

Asn Asp Asn Lys Met Met Glu Ile Leu Arq Tyr Thr His Gln Phe Leu 1225 Gln Lys Phe Cys Ala Gly Asn Pro Gly Asn Gln Ala Leu Leu His Lys 1235 1240 1245 His Leu Gln Leu Phe Leu Thr Pro Gly Leu Leu Glu Ala Glu Thr Met 1250 1255 1260 Gln His Ile Phe Leu Asn Asn Tyr Gln Leu Cys Ser Glu Ile Ser Glu 1270 1275 Pro Val Leu Gln His Phe Val His Cys Trp Pro Thr His Gly Arg His 1285 1290 1295 Val Gln Tyr Leu Asp Phe Leu His Thr Val Ile Lys Ala Glu Gly Lys 1300 1305 1310 Tyr Val Lys Lys Cys Gln Asp Met Ile Met Thr Glu Leu Thr Asn Ala 1315 1320 1325 Gly Asp Asp Val Val Val Phe Tyr Asn Asp Lys Ala Ser Leu Ala His 1335 1340 Leu Leu Asp Met Met Lys Ala Ala Arg Asp Gly Val Glu Asp His Ser 1345 1350 1355 Pro Leu Met Tyr His Ile Ser Leu Val Asp Leu Leu Ala Ala Cys Ala 1365 1370 1375 Glu Gly Lys Asn Val Tyr Thr Glu Ile Lys Cys Thr Ser Leu Leu Pro 1385 1390 1380 Leu Glu Asp Val Val Ser Val Val Thr His Glu Asp Cys Ile Thr Glu 1395 1400 1405 Val Lys Met Ala Tyr Val Asn Phe Val Asn His Cys Tyr Val Asp Thr 1410 1415 1420 Glu Val Glu Met Lys Glu Ile Tyr Thr Ser Asn His Ile Trp Thr Leu 1425 1430 1435 1440 Phe Glu Asn Phe Thr Leu Asp Met Ala Leu Val Cys Asn Lys Arg Glu 1445 1450 1455 Lys Arg Leu Ser Asp Pro Thr Leu Glu Lys Tyr Val Leu Thr Val Val 1460 1465 1470 Leu Asp Thr Ile Ser Ala Phe Phe Ser Ser Pro Phe Ser Glu Asn Ser 1475 1480 1485 Thr Ser Leu Gln Thr His Gln Thr Ile Val Val Gln Leu Leu Gln Ser 1490 1495 1500 Thr Thr Arg Leu Leu Glu Cys Pro Trp Leu Gln Gln His Lys Gly 1505 1510 1515 1520 Ser Val Glu Ala Cys Val Arg Thr Leu Ala Met Val Ala Lys Ser Arg 1525 1530 1535 Ala Ile Leu Leu Pro Met Asp Leu Asp Ala His Met Ser Ala Leu Leu 1540 1545 1550 Ser Ser Gly Gly Ser Cys Ser Ala Ala Ala Gln Arg Ser Ala Ala Asn 1555 1560 1565 Tyr Lys Thr Ala Thr Arg Thr Phe Pro Arg Val Ile Pro Thr Ala Asn 1570 1575 1580 Gln Trp Asp Tyr Lys Asn Ile Ile Glu Lys Leu Gln Asp Ile Ile Thr 1585 1590 1595 1600 Ala Leu Glu Glu Arg Leu Lys Pro Leu Val Gln Ala Glu Leu Ser Val 1605 1610 1615 Leu Val Asp Met Leu His Trp Pro Glu Leu Leu Phe Leu Glu Gly Ser 1620 1625 1630 Glu Ala Tyr Gln Arg Cys Glu Ser Gly Gly Phe Leu Ser Lys Leu Ile 1635 1640 1645 Arg His Thr Lys Gly Leu Met Glu Ser Glu Glu Lys Leu Cys Val Lys 1650 1655 1660 Val Leu Arg Thr Leu Gln Gln Met Leu Gln Lys Lys Ser Lys Tyr Gly 1665 1670 1675 1680 Asp Arg Gly Asn Gln Leu Arg Lys Met Leu Leu Gln Asn Tyr Leu Gln 1685 1690

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Ser	Val Phe Arg His 400 Leu Ile
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Cys Gln Ai 850	_			855		_			860				
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Glu Glu As	5				920					925			
Glu Leu Me 930				935				_	940				
Thr Pro Me	t Ala	Ala	Ala 950	Pro	Glu	Gly		Val 955	Lys	Gln	Ala	Glu	Pro 960
Glu Lys G	_	Ile 965	Met	Val	Met	Asp	Thr 970	Lys	Leu	Lys	Ile	Ile 975	Glu
Ile Leu G	n Phe 980	Ile	Leu	Asn	Val	Arg 985	Leu	Asp	Tyr	Arg	Ile 990	Ser	Cys
Leu Leu Cy		Phe	Lys	Arg	Glu 1000		Asp	Glu	Ser	Asn 1005		Gln	Ser
Ser Glu Ti 1010	r Ser	Ser	Gly	Asn 1015		Ser	Gln	Glu	Gly 1020		Ser	Asn	Val
Pro Gly A	a Leu	Asp	Phe 1030		His	Ile	Glu	Glu 1035		Ala	Glu	Gly	Ile 1040
Phe Gly G	_	Glu 1045	Glu		Thr	Pro	Leu 1050		Leu	Asp	Asp	His 1055	
Gly Arg T		Leu		Val	Leu	Leu 1065		Leu	Thr	Met	His 1070		Tyr
Pro Pro Le	u Val 75	Ser	Gly	Ala	Leu 1080		Leu	Leu	Phe	Arg 1085		Phe	Ser
Gln Arg G	n Glu	Val			Ala			Gln	Val 1100		Leu	Leu	Val
Thr Ser G	n Asp	Val	Asp 1110		Tyr	Lys	Gln	Ile 1115		Gln	Asp	Leu	Asp 1120
Gln Leu A	_	Ile 1125		Glu	Lys	Ser	Glu 1130		Trp	Val	Tyr	Lys 1139	
Gln Gly P	o Asp 1140		Pro	Met	Asp	Gly 1145		Ser	Gly	Glu	Asn 1150		His
Lys Lys T	ır Glu .55	Glu	Gly	Thr	Ser 1160		Pro	Leu	Lys	His 1165		Ser	Thr
Ser Ser Ty	r Asn	Tyr	Arg	Val 1175		Lys	Glu	Ile	Leu 1180		Arg	Leu	Ser
Lys Leu C	rs Val	Gln	Glu 1190		Ala	Ser	Val	Arg 1195		Ser	Arg	Lys	Gln 1200
Gln Gln A	g Leu	Leu 1205		Asn	Met	Gly	Ala 1210		Ala	Val	Val	Leu 1215	
Leu Leu G	n Ile 1220	Pro		Glu	Lys	Ala 1225		Asp	Thr	Lys	Met 1230		Glu
Ile Met A	1220	Pro	Tyr			1225 Leu	5				1230 Ala)	

Gln Gln Asn Gln Ala Leu Leu His Lys His Ile Asn Leu Phe Leu Asn 1255 1260 Pro Gly Ile Leu Glu Ala Val Thr Met Gln His Ile Phe Met Asn Asn 1275 1270 Phe Gln Leu Cys Ser Glu Ile Asn Glu Arg Val Val Gln His Phe Val 1290 1285 His Cys Ile Glu Thr His Gly Arg Asn Val Gln Tyr Ile Lys Phe Leu 1305 1300 1310 Gln Thr Ile Val Lys Ala Glu Gly Lys Phe Ile Lys Lys Cys Gln Asp 1315 1320 1325 Met Val Met Ala Glu Leu Val Asn Ser Gly Glu Asp Val Leu Val Phe 1335 1340 Tyr Asn Asp Arg Ala Ser Phe Gln Thr Leu Ile Gln Met Met Arg Ser 1350 1355 Glu Arg Asp Arg Met Asp Glu Asn Ser Pro Leu Phe Met Tyr His Ile 1365 1370 1375 His Leu Val Glu Leu Leu Ala Val Cys Thr Glu Gly Lys Asn Val Tyr 1380 1385 1390 Thr Glu Ile Lys Cys Asn Ser Leu Leu Pro Leu Asp Asp Ile Val Arg 1395 1400 1405 Val Val Thr His Glu Asp Cys Ile Pro Glu Val Lys Ile Ala Tyr Ile 1410 1415 1420 Asn Phe Leu Asn His Cys Tyr Val Asp Thr Glu Val Glu Met Lys Glu 1430 1435 Ile Tyr Thr Ser Asn His Met Trp Lys Leu Phe Glu Asn Phe Leu Val 1445 1450 Asp Ile Cys Arg Ala Cys Asn Asn Thr Ser Asp Arg Lys His Ala Asp 1460 1465 1470 Ser Val Leu Glu Lys Tyr Val Thr Glu Ile Val Met Ser Ile Val Thr 1475 1480 1485 Thr Phe Phe Ser Ser Pro Phe Ser Asp Gln Ser Thr Thr Leu Gln Thr 1490 1495 1500 Arg Gln Pro Val Phe Val Gln Leu Leu Gln Gly Val Phe Arg Val Tyr 1505 1510 1515 His Cys Asn Trp Leu Met Pro Ser Gln Lys Ala Ser Val Glu Ser Cys 1525 1530 1535 Ile Arq Val Leu Ser Asp Val Ala Lys Ser Arg Ala Ile Ala Ile Pro 1540 1545 1550 Val Asp Leu Asp Ser Gln Val Asn Asn Leu Phe Leu Lys Ser His Asn 1555 1560 1565 Ile Val Gln Lys Thr Ala Met Asn Trp Arg Leu Ser Ala Arg Asn Ala 1580 1575 Ala Arg Arg Asp Ser Val Leu Ala Ala Ser Arg Asp Tyr Arg Asn Ile 1590 1595 Ile Glu Arg Leu Gln Asp Ile Val Ser Ala Leu Glu Asp Arg Leu Arg 1605 1610 1615 Pro Leu Val Gln Ala Glu Leu Ser Val Leu Val Asp Val Leu His Arg 1620 1625 1630 Pro Glu Leu Leu Phe Pro Glu Asn Thr Asp Ala Arg Arg Lys Cys Glu 1635 1640 1645 Ser Gly Gly Phe Ile Cys Lys Leu Ile Lys His Thr Lys Gln Leu Leu 1660 1655 Glu Glu Asn Glu Glu Lys Leu Cys Ile Lys Val Leu Gln Thr Leu Arg 1670 1675 1680 Glu Met Met Thr Lys Asp Arg Gly Tyr Ala Glu Lys Gly Glu Ala Leu 1685 1690 Arg Gln Ile Leu Val Asn Arg Tyr Tyr Gly Asn Ile Arg Pro Ser Gly 1700 1705 1710 Arg Arg Glu Ser Leu Thr Ser Phe Gly Asn Gly Pro Leu Ser Pro Gly 1720

Gly Pro Ser Lys Pro Gly Gly Gly Gly Gly Pro Gly Ser Gly Ser 1735 1740 Thr Ser Arg Gly Glu Met Ser Leu Ala Glu Val Gln Cys His Leu Asp 1750 1755 Lys Glu Gly Ala Ser Asn Leu Val Ile Asp Leu Ile Met Asn Ala Ser 1770 1765 Ser Asp Arq Val Phe His Glu Ser Ile Leu Leu Ala Ile Ala Leu Leu 1785 1790 1780 Glu Gly Gly Asn Thr Thr Ile Gln His Ser Phe Phe Cys Arg Leu Thr 1795 1800 1805 Glu Asp Lys Lys Ser Glu Lys Phe Phe Lys Val Phe Tyr Asp Arg Met 1815 1820 Lys Val Ala Gln Gln Glu Ile Lys Ala Thr Val Thr Val Asn Thr Ser 1830 1835 Asp Leu Gly Asn Lys Lys Asp Asp Glu Val Asp Arg Asp Ala Pro 1845 1850 1855 Ser Arg Lys Lys Ala Lys Glu Pro Thr Thr Gln Ile Thr Glu Glu Val 1860 1865 Arg Asp Gln Leu Leu Glu Ala Ser Ala Ala Thr Arg Lys Ala Phe Thr 1875 1880 1885 Thr Phe Arg Arg Glu Ala Asp Pro Asp Asp His Tyr Gln Ser Gly Glu 1890 1895 1900 Gly Thr Gln Ala Thr Thr Asp Lys Ala Lys Asp Asp Leu Glu Met Ser 1910 1915 Ala Val Ile Thr Ile Met Gln Pro Ile Leu Arg Phe Leu Gln Leu Leu 1925 1930 1935 Cys Glu Asn His Asn Arg Asp Leu Gln Asn Phe Leu Arg Cys Gln Asn 1940 1945 1950 Asn Lys Thr Asn Tyr Asn Leu Val Cys Glu Thr Leu Gln Phe Leu Asp 1955 1960 1965 Cys Ile Cys Gly Ser Thr Thr Gly Gly Leu Gly Leu Gly Leu Tyr 1970 1975 1980 Ile Asn Glu Lys Asn Val Ala Leu Ile Asn Gln Thr Leu Glu Ser Leu 1990 1995 2000 Thr Glu Tyr Cys Gln Gly Pro Cys His Glu Asn Gln Asn Cys Ile Ala 2005 2010 2015 Thr His Glu Ser Asn Gly Ile Asp Ile Ile Thr Ala Leu Ile Leu Asn 2020 2025 2030 Asp Ile Asn Pro Leu Gly Lys Lys Arg Met Asp Leu Val Leu Glu Leu 2035 2040 2045 Lys Asn Asn Ala Ser Lys Leu Leu Leu Ala Ile Met Glu Ser Arg His 2055 2060 Asp Ser Glu Asn Ala Glu Arg Ile Leu Tyr Asn Met Arg Pro Lys Glu 2065 2070 2075 2089 Leu Val Glu Val Ile Lys Lys Ala Tyr Met Gln Gly Glu Val Glu Phe 2090 2095 2085 Glu Asp Gly Glu Asn Gly Glu Asp Gly Ala Ala Ser Pro Arg Asn Val 2105 2110 2100 Gly His Asn Ile Tyr Ile Leu Ala His Gln Leu Ala Arg His Asn Lys 2115 2120 2125 Glu Leu Gln Thr Met Leu Lys Pro Gly Gly Gln Val Asp Gly Asp Glu 2130 2135 2140 Ala Leu Glu Phe Tyr Ala Lys His Thr Ala Gln Ile Glu Ile Val Arg 2150 2155 2160 Leu Asp Arg Thr Met Glu Gln Ile Val Phe Pro Val Pro Ser Ile Cys 2170 2175 2165 Glu Phe Leu Thr Lys Glu Ser Lys Leu Arg Ile Tyr Tyr Thr Thr Glu 2180 2185 2190 Arg Asp Glu Gln Gly Ser Lys Ile Asn Asp Phe Phe Leu Arg Ser Glu 2200

Asp Leu Phe Asn	Glu Met	Δen	Trn	G]n	Lve	Lve	I.e.ii	Δra	Δla	Gln	Pro
2210		2215			_	_	2220)			
Val Leu Tyr Trp 2225	Cys Ala 223	-	Asn	Met	Ser	Phe 2235		Ser	Ser	Ile	Ser 2240
Phe Asn Leu Ala	Val Leu 2245	Met .	Asn		Leu 2250		Ala	Phe	Phe	Tyr 2255	
Phe Lys Gly Val		Gly	Thr				His	Trp	Ser		
226 Leu Trp Thr Ala		Tle		2265 Leu		Tle	Val	Tle	2270 Ala		Pro
2275			2280					2285	5		
Lys Pro His Gly 2290	Ile Arg	A1a 2295		Ile	Ala	Ser	Thr 2300		Leu	Arg	Leu
Ile Phe Ser Val	Gly Leu 231		Pro	Thr	Leu	Phe 2315		Leu	Gly	Ala	Phe 2320
Asn Val Cys Asn	Lys Ile		Phe			Ser		Val	Gly		Cys
Gly Thr Phe Thr	2325 Arg Gly	Tyr	Arg .		2330 Met		Leu	Asp	Val	2335 Glu	
234 Leu Tyr His Leu	0			2345	;				2350)	
2355			2360		_			2365	5		
His Glu Phe Phe 2370	Tyr Ser	Leu 2375		Leu	Phe	Asp	Leu 2380		Tyr	Arg	Glu
Glu Thr Leu Leu 2385	Asn Val 239		Lys	Ser	Val	Thr 2395		Asn	Gly	Arg	Pro 2400
Ile Ile Leu Thr			Ala			Leu		Tyr	Leu		Ser
Ile Val Gly Tyr	2405 Leu Phe	Phe	Lvs		2410 Asp		Ile	Leu	Glu	2415 Val	
242	0			2425	;				2430)	
Arg Leu Pro Asn 2435	GIU Thr		G1y 2440		GIu	Thr	GIA	G1u 2445		Leu	Ala
Asn Asp Phe Leu	Tur Car	7	77 - 7	a	_	** - 7	G3	001	~7	~ 1	7 ~ ~
2450	Tyr Ser	2455		Cys	Arg	vaı	2460		GIA	GIU	ASII
2450 Cys Thr Ser Pro	Ala Pro	2455 Lys		_		Leu	2460 Pro)			Thr
2450	Ala Pro 247	2455 Lys 0	Glu	Glu	Leu	Leu 2475	2460 Pro	Val	Glu	Glu	Thr 2480
2450 Cys Thr Ser Pro 2465 Glu Gln Asp Lys	Ala Pro 247 Glu His 2485	2455 Lys 0 Thr	Glu Cys	Glu Glu	Leu Thr 2490	Leu 2475 Leu)	2460 Pro Leu	Val Met	Glu Cys	Glu Ile 2495	Thr 2480 Val
2450 Cys Thr Ser Pro 2465 Glu Gln Asp Lys Thr Val Leu Ser 250	Ala Pro 247 Glu His 2485 His Gly	2455 Lys 0 Thr	Glu Cys Arg	Glu Glu Ser 2505	Leu Thr 2490 Gly	Leu 2475 Leu) Gly	2460 Pro Leu Gly	Val Met Val	Glu Cys Gly 2510	Glu Ile 2495 Asp	Thr 2480 Val Val
2450 Cys Thr Ser Pro 2465 Glu Gln Asp Lys Thr Val Leu Ser 250 Leu Arg Lys Pro 2515	Ala Pro 247 Glu His 2485 His Gly	2455 Lys 0 Thr Leu Glu	Glu Cys Arg Glu 2520	Glu Glu Ser 2505 Pro	Leu Thr 2490 Gly Leu	Leu 2475 Leu) Gly Phe	2460 Pro Leu Gly	Val Met Val Ala 2525	Glu Cys Gly 2510 Arg	Glu Ile 2495 Asp Val	Thr 2480 Val Val
2450 Cys Thr Ser Pro 2465 Glu Gln Asp Lys Thr Val Leu Ser 250 Leu Arg Lys Pro 2515 Tyr Asp Leu Leu	Ala Pro 247 Glu His 2485 His Gly	2455 Lys 0 Thr Leu Glu	Glu Cys Arg Glu 2520 Met	Glu Glu Ser 2505 Pro	Leu Thr 2490 Gly Leu	Leu 2475 Leu) Gly Phe	2460 Pro Leu Gly	Val Met Val Ala 2525 Val	Glu Cys Gly 2510 Arg	Glu Ile 2495 Asp Val	Thr 2480 Val Val
2450 Cys Thr Ser Pro 2465 Glu Gln Asp Lys Thr Val Leu Ser 2500 Leu Arg Lys Pro 2515 Tyr Asp Leu Leu 2530 Ile Phe Gly Val	Ala Pro 247 Glu His 2485 His Gly O Ser Lys	2455 Lys 0 Thr Leu Glu Phe 2535 Asp	Glu Cys Arg Glu 2520 Met	Glu Glu Ser 2505 Pro Val	Leu Thr 2490 Gly Leu	Leu 2475 Leu) Gly Phe Ile	2460 Pro Leu Gly Ala Ile 2540 Leu	Val Met Val Ala 2525 Val	Glu Cys Gly 2510 Arg Leu	Glu Ile 2495 Asp Val	Thr 2480 Val Val Ile Leu
2450 Cys Thr Ser Pro 2465 Glu Gln Asp Lys Thr Val Leu Ser 2500 Leu Arg Lys Pro 2515 Tyr Asp Leu Leu 2530	Ala Pro 247 Glu His 2485 His Gly O Ser Lys Phe Phe	2455 Lys 0 Thr Leu Glu Phe 2535 Asp	Glu Cys Arg Glu 2520 Met	Glu Glu Ser 2505 Pro Val Phe	Thr 2490 Gly Leu Ile	Leu 2475 Leu Gly Phe Ile Asp 2555	Leu Gly Ala Ile 2540 Leu	Val Met Val Ala 2525 Val Arg	Glu Cys Gly 2510 Arg Leu Ser	Glu Ile 2495 Asp Val Asn Glu	Thr 2480 Val Val Ile Leu Lys 2560
2450 Cys Thr Ser Pro 2465 Glu Gln Asp Lys Thr Val Leu Ser 250 Leu Arg Lys Pro 2515 Tyr Asp Leu Leu 2530 Ile Phe Gly Val 2545 Gln Lys Lys Glu	Ala Pro 247 Glu His 2485 His Gly O Ser Lys Phe Phe 11e Ile 255 Glu Ile 2565	2455 Lys 0 Thr Leu Glu Phe 2535 Asp 0 Leu	Glu Cys Arg Glu 2520 Met Thr	Glu Glu Ser 2505 Pro Val Phe Thr	Leu Thr 2490 Gly Leu Ile Ala Thr 2570	Leu 2475 Leu Gly Phe Ile Asp 2555 Cys	2460 Pro Leu Gly Ala Ile 2540 Leu	Val Met Val Ala 2525 Val Arg	Glu Cys Gly 2510 Arg Leu Ser	Glu Ile 2495 Asp Val Asn Glu Gly 2575	Thr 2480 Val Val Leu Lys 2560 Leu
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Asn Pro Gln Gln Pro Ala
2705
                    2710
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Ser Pro Pro Leu Arg Gln Leu Glu Asp His Lys Arg Gly Glu Ala Leu
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<220>
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